



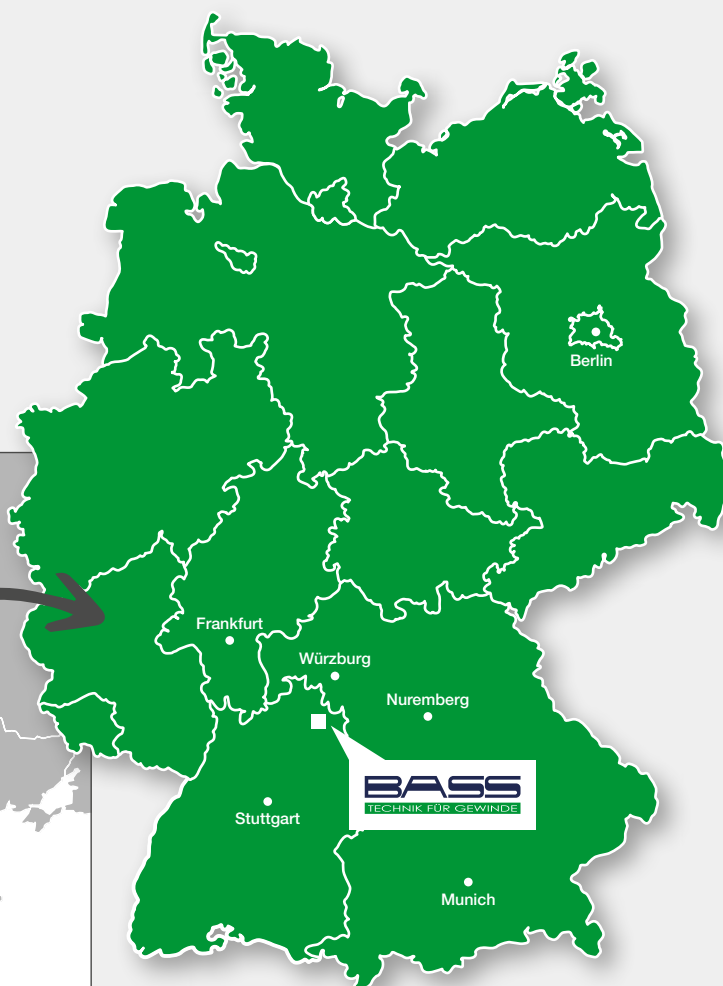
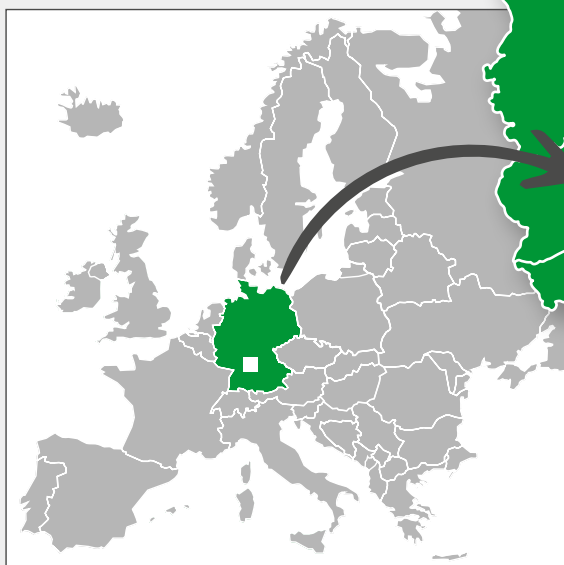
APPLICATION TABLE



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TAP RECOMMENDATIONS

In the table below you will find our recommendations for standard and performance taps for each material group.

Please note: Tools not included in this table can still be a good choice. Most tools are named without coolant, please make sure to choose fitting coolant for your application. For a more detailed choice please use our application table.

Whenever you are unsure which tool fits best please get in contact with us. We are glad to help.

	Application	Examples	R _m N/mm ²	HB	HRC	Roll Tap Through & Blind Hole		Cutting Tap Through Hole		Cutting Tap Blind Hole	
						Standard Tap	Performance Tap	Standard Tap	Performance Tap	Standard Tap	Performance Tap
P	Steel materials										
	Magnetic soft steel	FeP01	> 100 < 450			DURAMAX N TIN	DURAMAX H BT	VARIANT N TIN	VARIANT MHST TIN* / VA HL	DOMINANT N38 TIN	DOMINANT MHST45 HL* / VA45 HL
	Construction steel / case hardening steel	En40B	> 300 < 700			DURAMAX N TIN	DURAMAX H BX	VARIANT N TIN	VARIANT MHST TIN* / VA HL	DOMINANT N38 TIN	DOMINANT MHST45 HL* / VA45 HL
	Carbon steel	080M46	> 400 < 950			DURAMAX N TIN	DURAMAX H BX	VARIANT N TIN	VARIANT MHST TIN* / VA HL	DOMINANT N38 TIN	DOMINANT MHST45 HL* / VA45 HL
	Alloyed / heat-treatable steel	En19A	> 450 < 950			DURAMAX N TIN	DURAMAX H ZP BX	VARIANT H TIN	VARIANT MHST TIN* / VA HL	DOMINANT H Z38 TICN	DOMINANT MHST45 HL* / VA45 KA HL
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	DURAMAX N TIN	DURAMAX H ZP BX	VARIANT H TICN	VARIANT MHST TIN* / VA HL	DOMINANT H Z38 TICN	DOMINANT MHST45 HL* / VA45 KA HL
M	Stainless steel										
	Ferritic / martensitic steel	420S37	> 450 < 1200			DURAMAX H TIN	DURAMAX H BT	VARIANT MHST TIN* / VA HL	VARIANT MHST TIN* / VA HL	DOMINANT MHST45 HL* / VA45 TIN	DOMINANT MHST45 HL* / VA45 HL
	Austenitic steel	320S18	> 400 < 950			DURAMAX H TIN	DURAMAX H BT	VARIANT MHST TIN* / VA HL	VARIANT HVA BT / MHST TIN*	DOMINANT MHST45 HL* / VA45 TIN	DOMINANT MHST45 HL* / VA45 HL
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	DURAMAX H TIN	DURAMAX H BT	VARIANT TIH TICN	VARIANT HVA BT / MHST TIN*	DOMINANT MHST45 HL* / VA45 HL	AVANT HVA15 KA HK BT
K	Cast iron										
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300		✗	✗	VARIO GG TICN	VARIO GG BT	AVANT H15 TICN	VARIO GG BT
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		✗	✗	VARIANT H TICN	VARIO GG BT	AVANT H15 TICN	AVANT GAL15 KA TICN VHM
	Malleable cast iron	EN-GJMB- 350-10	> 300 < 700	> 100 < 200		🟢 DURAMAX H BT	🟢 DURAMAX H BT	VARIANT H TICN	VARIO GG BT	AVANT H15 TICN	AVANT GAL15 KA TICN VHM
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32	🟢 DURAMAX H BT	🟢 DURAMAX H BT	VARIANT H TICN	VARIO GG BT	AVANT TIH13 TICN	AVANT GAL15 KA TICN VHM
N	Copper										
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120		DURAMAX N TIN	DURAMAX H BT	VARIANT H TIN	VARIANT MHST TIN* / VA HL	DOMINANT MHST45 HL* / VA45 TIN	DOMINANT MHST45 HL* / VA45 HL
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200		🟢 DURAMAX N TIN	🟢 DURAMAX H BT	VARIANT MHST TIN* / VA TIN	VARIO MS	AVANT H25 HL	AVANT H25 HL
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		DURAMAX N TIN	DURAMAX H BT	VARIANT N TIN	VARIANT MHST TIN* / VA HL	DOMINANT MHST45 HL* / VA45 HL	DOMINANT MHST45 HL* / VA45 TIN
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200		🟢 DURAMAX N TIN	🟢 DURAMAX H BT	VARIANT MHST TIN* / VA TIN	VARIO H TICN	AVANT H15 TICN	AVANT H25 HL
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220		DURAMAX N TIN	DURAMAX H BT	VARIANT H TIN	VARIANT TIH TICN	DOMINANT MHST45 HL* / VA45 TIN	AVANT TIH13 TICN
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190		DURAMAX N TIN	DURAMAX H BT	VARIANT TIH TICN	VARIANT TIH TICN	AVANT H15 TICN	AVANT TIH13 TICN
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47	🟢 DURAMAX N TIN	🟢 DURAMAX H BT	VARIO SH TICN SR VHM	VARIO SH TICN SR VHM	AVANT NI13 TICN	AVANT NI13 TICN

TAP RECOMMENDATIONS

	Application	Examples	R _m N/mm ²	HB	HRC	Roll Tap Through & Blind Hole		Cutting Tap Through Hole		Cutting Tap Blind Hole	
						Standard Tap	Performance Tap	Standard Tap	Performance Tap	Standard Tap	Performance Tap
N	Aluminium / Magnesium										
	Alu wrought alloy Si ≤0,5%	1B	> 100 < 700	> 30 < 200		DURAMAX H BT	DURAMAX GAL BT	VARIANT N (TIN)	VARIANT VA BNE / MHST TIN*	DOMINANT N38	DOMINANT VA45 BNE / MHST45 KA HL
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		DURAMAX H TIN	DURAMAX GAL BT	VARIANT MHST TIN* / VA TIN	VARIANT MHST TIN* / VA HL	DOMINANT MHST45 HL* / VA45 TIN	AVANT GAL15 TICN VHM
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		DURAMAX H BT	DURAMAX GAL BT	VARIANT MHST TIN* / VA TIN	VARIANT MHST TIN* / VA HL	DOMINANT MHST45 HL* / VA45 TIN	AVANT GAL15 TICN VHM
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150		✕	✕	VARIO GG TICN	VARIO GG BT	AVANT H15 TICN	AVANT GAL15 TICN VHM
	Synthetics										
	Thermoplastic (long chipping)	Styreme	> 20 < 80			✕	✕	VARIANT N TIN	VARIANT MHST TIN* / VA HL	DOMINANT N38	DOMINANT MHST45 HL / VA45
	Duroplastic (short chipping)	Toufnell	> 80 < 110			✕	✕	VARIO GG TICN	VARIO GG BT	DOMINANT N38	DOMINANT MHST45 HL / VA45
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440		✕	✕	VARIO GG TICN	VARIO GG BT	AVANT GAL15 KA TICN VHM	AVANT GAL15 KA TICN VHM
	Special materials										
	Cobalt alloyed		> 400 < 2000	> 120 < 590		✕	✕	VARIANT TIH TICN	VARIO GG TICN	AVANT TIH13 TICN	AVANT TIH13 TICN
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52	✕	✕	VARIANT NI TICN	VARIO GG TICN	AVANT NI13 TICN	AVANT NI13 TICN
	TiC-hard material			> 440 < 495	> 47 < 50	✕	✕	VARIO SH TICN SR HSSE-PM	VARIO SH TICN SR HSSE-PM	VARIO SH TICN SR HSSE-PM	VARIO SH TICN SR HSSE-PM
	Graphite		> 38 < 60			✕	✕	VARIO GG BT	VARIO GG TICN VHM	VARIO GG BT	VARIO GG TICN VHM
S	Titanium										
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200		DURAMAX H BT	DURAMAX GAL BT	VARIANT TIH TICN	VARIANT HVA BT / MHST TIN*	AVANT TIH13 TICN	AVANT HVA15 BT
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27	DURAMAX H BT	○ DURAMAX GAL BT	VARIANT TIH TICN	VARIANT HVA BT / MHST TIN*	AVANT TIH13 TICN	AVANT HVA15 BT
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40	DURAMAX H BT	○ DURAMAX GAL BT	VARIANT TIH TICN	VARIANT HVA BT / MHST TIN*	AVANT TIH13 TICN	AVANT HVA15 BT
	Nickel										
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175		DURAMAX H BT	DURAMAX GAL BT	VARIANT MHST TIN* / VA TIN	VARIANT MHST TIN* / VA HL	AVANT NI13 TICN	AVANT NI13 TICN
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39	○ DURAMAX GAL BT	○ DURAMAX GAL BT	VARIANT MHST TIN* / VA TIN	VARIANT TIH TICN	AVANT HVA15 BT	AVANT TIH13 TICN
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48	✕	✕	VARIANT NI TICN	VARIANT NI TICN	AVANT NI13 TICN	AVANT NI13 TICN
H	Steel materials										
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	DURAMAX N TIN	DURAMAX H BT	VARIANT H TICN	VARIANT MHST TIN* / TIH TICN / VA HL	DOMINANT MHST45 HL* / VA45 HL	AVANT TIH13 TICN
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48	✕	✕	VARIANT H TICN	VARIANT TIH TICN	DOMINANT MHST45 HL* / VA45 HL	AVANT TIH13 TICN
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 56	✕	✕	VARIO SH TICN SR HSSE-PM	VARIO SH TICN SR HSSE-PM	AVANT NI13 TICN	VARIO SH TICN SR HSSE-PM
	Hardened steel	BA2			> 56 < 63	✕	✕	VARIO SH TICN SR VHM	VARIO SH TICN SR VHM	AVANT NI13 TICN	VARIO SH TICN SR VHM

APPLICATION TABLE FOR ROLL TAPS

cutting speed

$$v_c = \frac{n \cdot \pi \cdot d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c \cdot 1000}{\pi \cdot d_1}$$

How to proceed

1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

through and blind hole				
DURAMAX N	DURAMAX N	DURAMAX NO	DURAMAX NB	
				
model	HSSE-PM	TIN HSSE-PM	TIN HSSE-PM	TIN TS HSSE-PM
GT = Ød ₁ x	3	3	3	3
thread type	M: 32	M: 32-34 MF: 98-99 G: 120 UNC: 134 UNF: 140	M: 34-35	M: 36

	Application	Examples of materials	R _m N/mm ²	HB	HRC	vc m/min			
P	Steel materials								
	Magnetic soft steel	FeP01	> 100 < 450				20-30	20-30	20-30
	Construction steel / case hardening steel	En40B	> 300 < 700				20-50	20-50	20-50
	Carbon steel	080M46	> 400 < 950				20-30	20-30	20-30
	Alloyed / heat-treatable steel	En19A	> 450 < 950				15-30	15-30	15-30
M	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40		10-20	10-20	10-20
	Stainless steel								
	Ferritic / martensitic steel	420S37	> 450 < 1200				6-12	6-12	6-12
	Austenitic steel	320S18	> 400 < 950				8-12	8-12	8-12
K	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48		4-10	4-10	4-10
	Cast iron								
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300					
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350					
N	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200					
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32				
	Copper								
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120		4-8	10-30	10-30	10-35
N	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200					
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200			15-35	15-35	15-35
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200					
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220					
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190					
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47				
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤ 0,5%	1B	> 100 < 700	> 30 < 200		15-30			
	Alu alloyed Si ≤ 6%	LM22	> 150 < 700	> 45 < 200		10-25	20-40	20-40	20-40
	Alu alloyed Si > 6%	LM9	> 150 < 900	> 45 < 265			15-40	15-40	15-40
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150					
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80						
	Duroplastic (short chipping)	Touffnell	> 80 < 110						
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440					
	Special materials								
S	Cobalt alloyed		> 400 < 2000	> 120 < 590					
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52				
	TiC-hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60						
	Titanium								
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200		10-15			
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27				
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40				
	Nickel								
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175		10-25	10-25	10-25	10-25
H	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39				
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Steel materials								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45				
H	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53				
	Hardened steel	BA2			> 53 < 63				

	through and blind hole											
	DURAMAX H	DURAMAX H	DURAMAX H	DURAMAX H	DURAMAX H	DURAMAX H	DURAMAX H	DURAMAX H	DURAMAX H	DURAMAX HO	DURAMAX H2P	DURAMAX GAL
												
	TIN HSSE-PM	KA TIN HSSE-PM	KR TIN HSSE-PM	BT HSSE-PM	KA BT HSSE-PM	KA BT VHM	KR BT HSSE-PM	KR BT VHM	BX HSSE-PM	TIN HSSE-PM	KA BX HSSE-PM	BT HSSE-PM
	3	3	3	3	3	3	3	3	3	3	3	3
	M: 38 MF: 98 G: 120 EG M: 153 EG MF: 156 EG MJ: 165	M: 39 MF: 98	M: 39	M: 41, 42, 44 MF: 100 G: 120 UNC: 134 UNF: 140	M: 42-44 MF: 100	M: 42	M: 43-44	M: 44	M: 45 MF: 100	M: 46	M: 48-49 MF: 101	M: 48-51 MF: 102-103 G: 120
	vc m/min											
	Steel materials											
	20-30	20-30	20-30	20-35	20-35	30-40	20-35	30-40	20-35	20-30	30-40	20-35
	20-50	20-50	20-50	20-55	20-55	20-60	20-55	20-60	20-55	20-50	20-60	20-55
	20-30	20-30	20-30	20-35	20-35	20-60	20-35	20-60	20-35	20-30	20-60	20-35
	15-30	15-30	15-30	15-35	15-35	20-50	15-35	20-50	15-35	15-30	20-50	15-35
	10-20	10-20	10-20	10-25	10-25	15-35	10-25	15-35	10-25	10-20	15-35	10-25
	Stainless steel											
	6-12	6-12	6-12	6-15	6-15	10-25	6-15	10-25	6-15	6-12	10-25	6-15
	8-12	8-12	8-12	8-15	8-15	10-25	8-15	10-25	8-15	8-12	10-25	8-15
	4-10	4-10	4-10	4-12	4-12	10-25	4-12	10-25	4-12	4-10	10-25	4-12
	Cast iron											
	Copper											
	10-30	10-30	10-30	10-35	10-35	25-50	10-35	25-50	10-35	10-30	10-30	10-35
	15-35	15-35	15-35	15-40	15-40	25-60	15-40	25-60	15-40	15-35	15-35	15-40
	Aluminium / Magnesium											
				15-40	15-40	25-80	15-40	25-80	15-40		15-40	20-50
	20-40	20-40	20-40	20-60	20-60	30-80	20-60	30-80	20-60	20-40	20-60	20-60
	15-40	15-40	15-40	15-50	15-50	30-60	15-50	30-60	15-50	15-40	15-50	15-50
	Synthetics											
	Special materials											
	Titanium											
	Nickel											
	10-25	10-25	10-25	10-25	10-25	12-35	10-25	12-35	10-25	10-25	10-25	
	Steel materials											
											5-8	

APPLICATION TABLE FOR CUTTING TAPS AND ROLL TAPS

cutting speed

$$v_c = \frac{n \cdot \pi \cdot d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c \cdot 1000}{\pi \cdot d_1}$$

How to proceed

1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

through and blind hole				
	DURAMAX GAL	DURAMAX GAL	DURAMAX GAL	DURAMAX GAL
				
model	KA BT VHM	MIKA BT HSSE-PM	MIKA BT MG HSSE-PM	MKR BT HSSE-PM
GT = Ød ₁ x	3	3	3	3
thread type	M: 50	M: 50	M: 50 MF: 102	M: 48, 49, 51 MF: 102

	Application	Examples of materials	R _m N/mm ²	HB	HRC	vc m/min			
P	Steel materials								
	Magnetic soft steel	FeP01	> 100 < 450			30-40	20-35	20-35	20-35
	Construction steel / case hardening steel	En40B	> 300 < 700			20-60	20-55	20-55	20-55
	Carbon steel	080M46	> 400 < 950			20-60	20-35	20-35	20-35
	Alloyed / heat-treatable steel	En19A	> 450 < 950			20-50	15-35	15-35	15-35
M	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	15-35	10-25	10-25	10-25
	Stainless steel								
	Ferritic / martensitic steel	420S37	> 450 < 1200			10-25	6-15	6-15	6-15
	Austenitic steel	320S18	> 400 < 950			10-25	8-15	8-15	8-15
K	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	10-25	4-12	4-12	4-12
	Cast iron								
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300					
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350					
N	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200					
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32				
	Copper								
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120		25-50	10-35	10-35	10-35
N	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200					
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		25-60	15-40	15-40	15-40
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200					
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220					
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190					
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47				
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤0,5%	1B	> 100 < 700	> 30 < 200		30-90	20-50	20-50	20-50
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		30-90	20-60	20-60	20-60
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		30-70	15-50	15-50	15-50
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150					
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80						
	Duroplastic (short chipping)	Touffnell	> 80 < 110						
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440					
	Special materials								
S	Cobalt alloyed		> 400 < 2000	> 120 < 590					
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52				
	TiC-hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60						
	Titanium								
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200					
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27				
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40				
	Nickel								
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175		10-25	10-25	10-25	10-15
H	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39				
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Steel materials								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45				
H	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53				
	Hardened steel	BA2			> 53 < 63				

through and blind hole		through hole										
DURAMAX GAL	DURAMAX GAL	VARIANT N	VARIANT N	VARIANT H	VARIANT H	VARIANT H	VARIANT H	VARIANT H	VARIANT VA	VARIANT VA	VARIANT VA	VARIANT VA
												
MKR AK BT HSSE-PM	MKR AK BT VHM	HSSE-PM	TIN HSSE-PM	HSSE-PM	VAP HSSE-PM	TIN HSSE-PM	TICN HSSE-PM	VAP HSSE-PM	TIN HSSE-PM	HL HSSE-PM	BNE HSSE-PM	
3	3	3	3	3	3	3	3	3	3	3	3	3
M: 51 MF: 102	M: 51 MF: 104 EG M: 153 EG MJ: 165	M: 52 UNEF: 146	M: 52 UNEF: 146	M: 54-55 BSW: 151	M: 56-57	M: 56, 58-60 BSW: 151	M: 60-61 MF: 106-107	M: 62-63	M: 62-65 MF: 106-108 G: 121 UNC: 135 UNF: 141	M: 64-65 MF: 106-107 G: 121 UNC: 135 UNF: 141 EG M: 154-155	M: 64-65	
vc m/min												
Steel materials												
20-35	30-40		20-30						10-15	20-30	20-30	
20-55	20-60	10-20	20-30						10-20	20-30	20-30	
20-35	20-60	10-20	20-30	10-20	10-20	20-30	20-30	10-20	20-30	20-30	20-30	
15-35	20-50			10-15	10-15	15-35	15-35	10-15	15-35	15-35	15-35	
10-25	15-35			5-10		10-20	10-20		10-20	10-20	10-20	
Stainless steel												
6-15	10-25				4-6	6-12		4-6	6-12	6-12	6-12	
8-15	10-25				3-8	6-12		3-8	6-12	6-12	6-12	
4-12	10-25				1-4	3-6		1-4	3-8	3-8	3-8	
Cast iron												
						10-25	10-25		8-20	8-20		
						15-25	15-25		15-25	15-25		
							5-15		5-15	5-15		
Copper												
10-35	25-50			6-10		10-25			10-25	10-25	10-35	
									15-35	15-35	15-35	
15-40	25-60		15-35			15-35			15-35	15-35	15-40	
				6-12		12-20	15-25		15-25		10-25	
											15-30	
Aluminium / Magnesium												
20-50	25-80	10-25										15-40
20-60	30-80	10-25	15-40						15-40	15-40	15-40	
15-50	30-60		15-40						15-40	15-40	15-40	
							20-30					15-40
Synthetics												
		10-25	10-25						10-25			
Special materials												
Titanium												
								5-10				
Nickel												
10-25	12-35		8-15						8-15		10-25	
									3-6		10-20	
Steel materials												
								3-8				

APPLICATION TABLE FOR CUTTING TAPS

cutting speed

$$v_c = \frac{n \cdot \pi \cdot d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c \cdot 1000}{\pi \cdot d_1}$$

How to proceed

1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

through hole				
VARIANT MHST	VARIANT MHST	VARIANT HVA	VARIANT TIH	
				
model	HK TIN HSSE-PM	KR HK TIN HSSE-PM	HK BT HSSE-PM	TICN HSSE-PM
GT = Ød ₁ x	3	3	3	3
thread type	M: 66	M: 66 MF: 108	M: 66	M: 67 MF: 108 MJ: 160 UNJC: 161 UNJF: 163

	Application	Examples of materials	R _m N/mm ²	HB	HRC	vc m/min			
P	Steel materials								
	Magnetic soft steel	FeP01	> 100 < 450			20-80	20-80		
	Construction steel / case hardening steel	En40B	> 300 < 700			20-80	20-80		
	Carbon steel	080M46	> 400 < 950			20-80	20-80		
	Alloyed / heat-treatable steel	En19A	> 450 < 950			15-45	15-45		20-30
M	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	15-35	15-35		10-25
	Stainless steel								
	Ferritic / martensitic steel	420S37	> 450 < 1200			8-12	8-12		
	Austenitic steel	320S18	> 400 < 950			8-15	8-15	8-15	
K	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	3-10	3-10	3-12	3-10
	Cast iron								
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300					
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		15-25	15-25		15-25
N	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200		15-25	15-25		15-25
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32	5-15	5-15		5-15
	Copper								
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120		20-30	20-30		
N	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200		20-60	20-60		
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		20-50	20-50		
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200		15-30	15-30		10-20
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220		15-25	15-25		15-25
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190					5-12
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47				
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤ 0,5%	1B	> 100 < 700	> 30 < 200					
	Alu alloyed Si ≤ 6%	LM22	> 150 < 700	> 45 < 200		20-60	20-60		
	Alu alloyed Si > 6%	LM9	> 150 < 900	> 45 < 265		20-60	20-60		
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150		25-40	25-40		25-35
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80			15-30	15-30		
	Duroplastic (short chipping)	Touffnell	> 80 < 110						
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440					
	Special materials								
S	Cobalt alloyed		> 400 < 2000	> 120 < 590					1-2
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52				
	TiC-hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60						
	Titanium								
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200				5-12	5-12
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27			5-15	5-15
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40			2-4	2-4
	Nickel								
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175		10-25	10-25		
H	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39	4-8	4-8	4-8	3-6
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Steel materials								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	8-15	8-15		3-12
H	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48				3-10
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53				
	Hardened steel	BA2			> 53 < 63				

	through hole	through and blind hole										
	VARIANT NI	VARIO N	VARIO N	VARIO N	VARIO H	VARIO H	VARIO H	VARIO SH	VARIO SH	VARIO HZ	VARIO GG	VARIO GG
												
	TICN HSSE-PM	HSSE	HSSE-PM	TIN HSSE-PM	VAP HSSE-PM	KA TICN HSSE-PM	KA HL SL FL HSSE-PM	TICN SR HSSE-PM	TICN SR VHM	AZ TIN HSSE-PM	TICN HSSE-PM	KA TICN HSSE-PM
	3	2	2	2	2	2	2,5	1,5	2,5	–	2	3
	M: 67 MJ: 160 UNJC: 161 UNJF: 163	Pg: 152	Rp: 128 Rc: 129 NPT: 130 NPTF: 131 NPSM: 132 NPSF: 133 UNEF: 146 Rd: 149 W: 150	Rp: 128 Rc: 129 NPT: 130 NPTF: 131 NPSM: 132 NPSF: 133 UNEF: 146 Rd: 149	Rc: 129	M: 68	M: 68–69	M: 68–70 MF: 110 G: 122	M: 68	NPT: 130	M: 70 MF: 110 G: 122 UNC: 135 UNF: 142	M: 70–71 MF: 110
	vc m/min											
	Steel materials											
		15–25	15–25	15–30			15–35			15–35		
		15–25	15–25	15–30			15–35			15–35		
		15–25	15–25	15–30	10–30	15–35	15–35			15–35		
					10–20	10–20	10–20			10–20		
	Stainless steel											
										5–10		
										5–10		
										2–5		
	Cast iron											
				15–30	15–30	20–30	20–30			20–30	20–40	20–60
				10–25	10–25	15–25	10–25			15–25	15–25	15–25
				10–25	10–25	15–25	15–25			15–25	15–25	15–25
						5–15	5–15				5–15	5–15
	Copper											
		10–25	10–25	15–30								
						15–35						
				10–20		10–20				10–20		
				10–20		15–25						
				6–10		8–12						
									5–10			
	Aluminium / Magnesium											
		10–25	10–25							15–35		
		10–25	10–25							15–35		
										10–25		
						25–35					25–35	25–35
	Synthetics											
		5–15	5–15	5–15	5–15	5–15					5–15	5–15
											3–10	3–10
	Special materials											
	2–3								4–8			
									4–8			
									4–8			
												5–15
	Titanium											
	Nickel											
	2–3											
	Steel materials											
	2–4				4–10	4–10	4–10					
								2–4				
								1–3	2–4			
								1–3				

APPLICATION TABLE FOR CUTTING TAPS

cutting speed

$$v_c = \frac{n \cdot \pi \cdot d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c \cdot 1000}{\pi \cdot d_1}$$

How to proceed

1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

through and blind hole				
VARIO GG	VARIO GG	VARIO MS		
				
model	KA TICN VHM	KA BT HSSE-PM	HSSE-PM	
GT = Ød ₁ x	3	3	2	
thread type	M: 70-71	M: 71 MF: 110	M: 72	

	Application	Examples of materials	R _m N/mm ²	HB	HRC	vc m/min			
P	Steel materials								
	Magnetic soft steel	FeP01	> 100 < 450						
	Construction steel / case hardening steel	En40B	> 300 < 700						
	Carbon steel	080M46	> 400 < 950						
	Alloyed / heat-treatable steel	En19A	> 450 < 950						
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40				
M	Stainless steel								
	Ferritic / martensitic steel	420S37	> 450 < 1200						
	Austenitic steel	320S18	> 400 < 950						
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48				
K	Cast iron								
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300		40-80	30-70		
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		25-50	20-35		
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200		25-50	20-35		
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32	20-40	5-20		
N	Copper								
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120					
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200			10-35		
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200					
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200			5-15		
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220					
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190					
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47				
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤ 0,5%	1B	> 100 < 700	> 30 < 200					
	Alu alloyed Si ≤ 6%	LM22	> 150 < 700	> 45 < 200					
	Alu alloyed Si > 6%	LM9	> 150 < 900	> 45 < 265					
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150		30-60	25-40		
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80						
	Duroplastic (short chipping)	Touffnell	> 80 < 110			20-40	5-20	5-15	
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440		5-20	3-15	3-10	
	Special materials								
	Cobalt alloyed		> 400 < 2000	> 120 < 590		4-8			
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52	4-8			
	TiC-hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60			20-50	8-20		
S	Titanium								
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200					
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27				
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40				
	Nickel								
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175					
H	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39				
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Steel materials								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45				
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53				
	Hardened steel	BA2			> 53 < 63				

	blind hole											
	AVANT H05	AVANT H15	AVANT H15	AVANT H15	AVANT H15	AVANT H25	AVANT VA15	AVANT HVA15	AVANT GAL15	AVANT GAL15	AVANT TIH13	AVANT NI13
												
	HSSE-PM	HSSE-PM	TICN HSSE-PM	KA TICN HSSE-PM	KA HL SL FL HSSE-PM	HL HSSE-PM	VAP HSSE-PM	KA HK BT HSSE-PM	KA TICN HSSE-PM	KA TICN VHM	TICN HSSE-PM	TICN HSSE-PM
	–	2	2	2	2	2	–	2,5	2,5	2,5	2,5	2,5
	Tr: 148	M: 74 G: 123 UN: 147	M: 74–75 MF: 111 G: 123 UN: 147	M: 74 MF: 111	M: 75	M: 76 MF: 111 G: 123	NPT: 130 NPTF: 131	M: 76	M: 77 MF: 112	M: 77 MF: 112	M: 77 MF: 112 UNC: 135 UNF: 142 MJ: 160 UNJC: 161 UNJF: 163	M: 78 MJ: 160 UNJC: 161 UNJF: 163
	vc m/min											
	Steel materials											
							10–15					
					15–35	20–30	10–20					
	10–15				15–35	20–30	10–20					
	8–15	10–15	15–35	15–35	15–35	15–35	10–15		15–35	15–35		
	5–10	5–10	10–20	10–20	10–20	10–20	5–10		10–20	10–20	10–25	
	Stainless steel											
						6–12	6–12					
						6–12	6–12	8–15				
						3–6	3–6	3–12			3–10	
	Cast iron											
			20–30	20–30	20–30		10–20					
			10–25	10–25	10–25	10–25	8–20		10–25	30–70	15–25	
			15–25	15–25	15–25		8–20		15–25	30–70	15–25	
			5–15	5–15	5–15				5–15	20–40	5–15	
	Copper											
		6–10					6–10					
		15–35				15–35	15–35					
		10–25	15–35	15–35		15–35	10–25		15–35			
		5–15	10–20	10–20			5–15		10–20	20–40	10–20	
		10–15	15–25	15–25			10–15		15–25		15–25	
		8–12	8–12	8–12					8–12	12–25	5–12	
												1–2
	Aluminium / Magnesium											
						15–40						
	10–25					15–35			15–40	30–70		
						15–35			15–40	30–60		
			25–35	25–35					25–35	50–70	25–35	
	Synthetics											
										5–25		
	Special materials											
											1–2	
												2–3
	Titanium											
								5–12			5–10	
								5–15			5–12	
								2–4			2–4	
	Nickel											
								3–6			3–6	
												2–3
	Steel materials											
			4–10	4–10	4–10	5–8			4–10	4–10	3–10	
												2–4

APPLICATION TABLE FOR CUTTING TAPS

cutting speed

$$v_c = \frac{n \cdot \pi \cdot d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c \cdot 1000}{\pi \cdot d_1}$$

How to proceed

1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

blind hole				
DOMINANT N38	DOMINANT N38	DOMINANT HZ38	DOMINANT HZ38	
				
model	HSSE-PM	TIN HSSE-PM	HSSE-PM	VAP HSSE-PM
GT = Ød ₁ ×	2,5	2,5	2,5	2,5
thread type	M: 80	M: 80	M: 80-81 MF: 113 G: 124 UNC: 136 UNF: 143 UN: 147	M: 80-81

	Application	Examples of materials	R _m N/mm ²	HB	HRC	vc m/min			
P	Steel materials								
	Magnetic soft steel	FeP01	> 100 < 450				20-30		
	Construction steel / case hardening steel	En40B	> 300 < 700			10-20	20-30	10-20	10-20
	Carbon steel	080M46	> 400 < 950			10-20	20-30	10-20	10-20
	Alloyed / heat-treatable steel	En19A	> 450 < 950					10-15	10-15
M	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40			5-10	
	Stainless steel								
	Ferritic / martensitic steel	420S37	> 450 < 1200						4-8
	Austenitic steel	320S18	> 400 < 950						4-8
K	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48				
	Cast iron								
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300					
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350					
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200					
N	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32				
	Copper								
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120				4-8	
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200					
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		10-25	15-35	10-25	
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200					
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220				10-15	10-15
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190					
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47				
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤ 0,5%	1B	> 100 < 700	> 30 < 200		10-25			
	Alu alloyed Si ≤ 6%	LM22	> 150 < 700	> 45 < 200		10-25	15-40		
	Alu alloyed Si > 6%	LM9	> 150 < 900	> 45 < 265		10-20	15-40		
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150					
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80			10-25	10-25		
	Duroplastic (short chipping)	Touffnell	> 80 < 110						
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440					
	Special materials								
	Cobalt alloyed		> 400 < 2000	> 120 < 590					
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52				
	TiC-hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60						
S	Titanium								
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200					
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27				
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40				
	Nickel								
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175					
H	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39				
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Steel materials								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45				
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53				
	Hardened steel	BA2			> 53 < 63				

	blind hole											
	DOMINANT HZ38	DOMINANT HZ38	DOMINANT HZ38	DOMINANT HZ38	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45	DOMINANT MHST45
												
	TIN HSSE-PM	TiCN HSSE-PM	HL HSSE-PM	KA HL HSSE-PM	HSSE-PM	VAP HSSE-PM	TIN HSSE-PM	HL HSSE-PM	KA HL HSSE-PM	BNE HSSE-PM	HL DF HSSE-PM	HK HL HSSE-PM
	2,5	2,5	2,5	2,5	3	3	3	3	3	3	>3	3
	M: 82 MF: 113 G: 124	M: 82	M: 82-84 MF: 113 G: 124 UNC: 136 UNF: 143 UN: 147	M: 82 MF: 113	M: 84-85 MF: 114 G: 125 UNC: 136-137 UNF: 143	M: 86	M: 86-87 MF: 114 G: 125 UNC: 138 UNF: 144	M: 87-91 MF: 116-118 G: 126-127 UNC: 138-139 UNF: 144-145 EG M: 154-155 EG MF: 157 EG UNC: 158 EG UNF: 159 EG MJ: 166	M: 88-89	M: 91	M: 94 MF: 116-117	M: 94
	vc m/min											
	Steel materials											
						10-15	20-30	20-30	20-30		20-30	20-60
	20-30		20-30	20-30		10-20	20-30	20-30	20-30		20-30	20-60
	20-30		20-30	20-30	10-20	10-20	20-30	20-30	20-30		20-30	20-60
	15-35	15-35	15-35	15-35	10-15	10-15	15-35	15-35	15-35		15-35	15-45
	10-20	10-20	10-20	10-20	5-10	5-10	10-20	10-20	10-20		10-20	15-35
	Stainless steel											
			6-12	6-12		4-6	6-12	6-12	6-12		6-12	8-12
			6-12	6-12		4-8	6-12	6-12	6-12		6-12	8-15
			3-6	3-6			3-6	3-6	3-6		3-6	3-10
	Cast iron											
								20-30	20-30		20-30	
		10-25	10-25	10-25				10-25	10-25		10-25	15-25
		15-25	15-25	15-25				15-25	15-25		15-25	15-25
		5-15	5-15	5-15				5-15	5-15		5-15	5-15
	Copper											
	10-25						10-25		10-25	10-35	10-25	
	15-35				10-25		15-35		15-35	15-40	15-35	
	15-25	15-25			10-15		15-25			15-30	15-25	
	Aluminium / Magnesium											
					10-25		15-35	15-35	15-35	15-40	15-35	15-35
					10-25		15-40	15-40	15-40	15-45	15-40	20-60
					10-20		15-40	15-40	15-40	15-45	15-40	20-60
	Synthetics											
					10-25		10-25					
	Special materials											
	Titanium											
						5-10				5-10		
										5-12		
	Nickel											
							8-15	8-15	8-15	8-20	8-15	10-25
								3-6	3-6	3-6	3-6	4-8
	Steel materials											
		4-10	4-10				5-8	5-8	5-8		5-8	8-12
												2-8

APPLICATION TABLE FOR CUTTING TAPS

cutting speed

$$v_c = \frac{n \cdot \pi \cdot d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c \cdot 1000}{\pi \cdot d_1}$$

How to proceed

1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

blind hole			
DOMINANT MHST45	DOMINANT HVA45	DOMINANT HVA45	
			
model KA HK HL HSSE-PM	HL HSSE-PM	HK BT HSSE-PM	
GT = Ød ₁ x	3	3	
thread type	M: 94-95	UNJC: 162 UNJF: 164	M: 95

	Application	Examples of materials	R _m N/mm ²	HB	HRC	vc m/min				
P	Steel materials									
	Magnetic soft steel	FeP01	> 100 < 450			20–60				
	Construction steel / case hardening steel	En40B	> 300 < 700			20–60	20–60	20–60		
	Carbon steel	080M46	> 400 < 950			20–60	20–60	20–60		
	Alloyed / heat-treatable steel	En19A	> 450 < 950			15–45	15–45	15–45		
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	15–35	15–35	15–35		
M	Stainless steel									
	Ferritic / martensitic steel	420S37	> 450 < 1200			8–12	8–12	8–12		
	Austenitic steel	320S18	> 400 < 950			8–15	8–15	8–15		
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	3–10	3–10	3–12		
K	Cast iron									
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300		20–60				
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		15–25				
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200		15–25				
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32	5–15				
N	Copper									
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120		20–30	20–30	20–30		
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200						
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		20–50	20–50	20–50		
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200						
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220			20–50	20–50		
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190						
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47					
	Aluminium / Magnesium									
	Alu wrought alloy Si ≤0,5%	1B	> 100 < 700	> 30 < 200		15–35	15–35	15–35		
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		20–60	20–60	20–60		
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		20–60	20–60	20–60		
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150						
	Synthetics									
	Thermoplastic (long chipping)	Styreme	> 20 < 80				15–20	15–20		
	Duroplastic (short chipping)	Toufnell	> 80 < 110							
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440						
	Special materials									
	Cobalt alloyed		> 400 < 2000	> 120 < 590						
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52					
	TiC-hard material			> 440 < 495	> 47 < 50					
	Graphite		> 38 < 60							
	S	Titanium								
		Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200			5–12	5–12	
Titanium alloyed		TA.10	> 450 < 900	> 135 < 265	> 14 < 27		5–15	5–15		
Titanium alloyed		TA.10	> 900 < 1250	> 265 < 370	> 27 < 40		2–4	2–4		
Nickel										
Nickel non-alloyed		BS3072: NA11	> 400 < 600	> 120 < 175		10–25				
Nickel alloyed		BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39	4–8	3–6	3–6		
Nickel alloyed		INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48					
H	Steel materials									
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	8–12	8–12	8–12		
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48	2–8	2–8	2–8		
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53					
	Hardened steel	BA2			> 53 < 63					

APPLICATION
TABLETHREAD
MILLING CUTTERS

APPLICATION TABLE FOR THREAD MILLING CUTTERS

cutting speed

$$v_c = \frac{n \cdot \pi \cdot d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c \cdot 1000}{\pi \cdot d_1}$$

feed rate outer contour

$$v_{fA} = v_{fAA} = n \cdot f_z \cdot z$$

GFA N



How to proceed

1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type and page

GT = thread depth

model		GFA N		d < 8	d > 8
		KA	KA TiCN		
M	p.	175	175		
MF	p.	176	176		
G	p.	177	177		
UNC / UNF	p.		178 / 179		
NPT / NPTF	p.	180 / 181	180 / 181		

	Application	Examples of materials	R _m N/mm²	HB	HRC	vc m/min		fz mm	
P	Steel materials								
	Magnetic soft steel	FeP01	> 100 < 450			40–80	80–200	0.030–0.060	0.040–0.150
	Construction steel / case hardening steel	En40B	> 300 < 700			40–80	80–200	0.015–0.060	0.040–0.150
	Carbon steel	080M46	> 400 < 950			30–80	60–120	0.015–0.060	0.040–0.150
	Alloyed / heat-treatable steel	En19A	> 450 < 950			30–80	60–120	0.015–0.060	0.040–0.150
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	20–60	40–120	0.010–0.060	0.040–0.100
M	Stainless steel								
	Ferritic / martensitic steel	420S37	> 450 < 1200			20–40	40–100	0.010–0.050	0.020–0.150
	Austenitic steel	320S18	> 400 < 950			20–40	30–60	0.010–0.050	0.020–0.150
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	20–40	40–80	0.010–0.040	0.020–0.100
K	Cast iron								
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300		80–140	100–200	0.020–0.100	0.040–0.150
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		60–120	80–200	0.020–0.080	0.040–0.120
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200		80–140	100–200	0.020–0.100	0.040–0.150
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32	60–120	80–200	0.020–0.080	0.040–0.120
N	Copper								
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120		100–300	150–400	0.040–0.120	0.070–0.200
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200		100–300	150–400	0.040–0.120	0.070–0.200
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		100–300	150–400	0.040–0.120	0.070–0.200
	Copper–alu–nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200		60–120	100–250	0.020–0.060	0.030–0.120
	Copper–alu–nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220		60–120	100–250	0.020–0.060	0.030–0.120
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190		60–80	60–120	0.020–0.060	0.030–0.120
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47	60–80	60–120	0.010–0.040	0.020–0.100
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤ 0,5%	1B	> 100 < 700	> 30 < 200		100–300	150–400	0.030–0.120	0.070–0.200
	Alu alloyed Si ≤ 6%	LM22	> 150 < 700	> 45 < 200		100–300	150–400	0.030–0.120	0.070–0.200
	Alu alloyed Si > 6%	LM9	> 150 < 900	> 45 < 265		100–300	150–400	0.030–0.120	0.070–0.200
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150		120–200	150–350	0.030–0.120	0.070–0.200
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80			60–150	100–400	0.040–0.120	0.060–0.200
	Duroplastic (short chipping)	Toufnell	> 80 < 110			60–150	100–400	0.040–0.120	0.060–0.150
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440			60–100	0.040–0.120	0.060–0.150
	Special materials								
	Cobalt alloyed		> 400 < 2000	> 120 < 590			30–50	0.020–0.060	0.040–0.100
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52		30–60	0.010–0.020	0.015–0.080
	TiC-hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60						
S	Titanium								
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200		15–40	30–80	0.015–0.080	0.030–0.150
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27	15–40	30–80	0.015–0.080	0.030–0.150
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40	15–40	30–60	0.015–0.060	0.030–0.120
	Nickel								
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175			30–60	0.020–0.060	0.040–0.100
H	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39		30–60	0.020–0.060	0.040–0.100
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48		30–40	0.015–0.050	0.030–0.080
	Steel materials								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	20–60	40–80	0.010–0.050	0.030–0.100
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48	20–40	30–60	0.010–0.020	0.015–0.080
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 56				
	Hardened steel	BA2			> 56 < 63				

	GFA HZP			GFE N		GFD HZP			
									

APPLICATION TABLE FOR THREAD MILLING CUTTERS

cutting speed

$$v_c = \frac{n \cdot \pi \cdot d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c \cdot 1000}{\pi \cdot d_1}$$

feed rate outer contour

$$v_{fA} = v_{fAA} = n \cdot f_z \cdot z$$

GFD SH



How to proceed

1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type and page

GT = thread depth

How to proceed 1. Select hole type 2. Select application 3. Search for cutting speed (vc m/min) 4. Select thread type and page GT = thread depth				model		BA	d < 5	d > 5			
										M	p.
				MF	p.						
						G	p.				
								UNC / UNF	p.		

	GFM N			GFM HZP		GFS N			
									
	KA	KA TiCN		KA BA		KA	KA TiCN	d < 8	d > 8
	195	195		196		201 / 202	201 / 202		
	195	195		196			203		
				197					
				198					
	vc m/min		fz mm	vc m/min	fz mm	vc m/min		fz mm	
	Steel materials								
	40–80	80–200	0.040–0.150	100–130	0.130–0.200	40–80	80–200	0.030–0.060	0.040–0.150
	40–80	80–200	0.040–0.150	100–130	0.130–0.200	40–80	80–200	0.015–0.060	0.040–0.150
	30–80	60–120	0.040–0.150	100–120	0.130–0.200	30–80	60–120	0.015–0.060	0.040–0.150
	30–80	60–120	0.040–0.150	80–105	0.130–0.200	30–80	60–120	0.015–0.060	0.040–0.150
	20–60	40–120	0.040–0.120	70–95	0.130–0.200	20–60	40–120	0.010–0.060	0.040–0.100
	Stainless steel								
	20–40	40–100	0.030–0.080	40–60	0.100–0.180	20–40	40–100	0.010–0.050	0.020–0.150
	20–40	30–60	0.030–0.080	30–50	0.100–0.180	20–40	30–60	0.010–0.050	0.020–0.150
	20–40	40–80	0.030–0.080	30–50	0.100–0.180	20–40	40–80	0.010–0.040	0.020–0.100
	Cast iron								
	80–140	100–200	0.040–0.100	120–140	0.150–0.230	80–140	100–200	0.020–0.100	0.040–0.150
	60–120	80–200	0.040–0.100	90–110	0.150–0.230	60–120	80–200	0.020–0.080	0.040–0.120
	80–140	100–200	0.040–0.100	85–105	0.150–0.230	80–140	100–200	0.020–0.100	0.040–0.150
	60–120	80–200	0.040–0.080	70–90	0.150–0.230	60–120	80–200	0.020–0.080	0.040–0.120
	Copper								
	100–300	150–400	0.070–0.200	260–300	0.210–0.290	100–300	150–400	0.040–0.120	0.070–0.200
	100–300	150–400	0.070–0.200	260–300	0.210–0.290	100–300	150–400	0.040–0.120	0.070–0.200
	100–300	150–400	0.050–0.150	250–270	0.210–0.290	100–300	150–400	0.040–0.120	0.070–0.200
	60–120	100–250	0.050–0.150	260–300	0.210–0.290	60–120	100–250	0.020–0.060	0.030–0.120
	60–120	100–250	0.050–0.150	250–270	0.210–0.290	60–120	100–250	0.020–0.060	0.030–0.120
	60–80	60–120	0.050–0.150	250–270	0.210–0.290	60–80	60–120	0.020–0.060	0.030–0.120
	60–80	60–120	0.020–0.080	250–270	0.210–0.290	60–80	60–120	0.010–0.040	0.020–0.100
	Aluminium / Magnesium								
	100–300	150–400	0.070–0.200	400–420	0.210–0.290	100–300	150–400	0.030–0.120	0.070–0.200
	100–300	150–400	0.070–0.200	410–430	0.210–0.290	100–300	150–400	0.030–0.120	0.070–0.200
	100–300	150–400	0.070–0.200	450–480	0.210–0.290	100–300	150–400	0.030–0.120	0.070–0.200
	120–200	150–350	0.070–0.200	470–490	0.210–0.290	120–200	150–350	0.030–0.120	0.070–0.200
	Synthetics								
	60–150	100–400	0.060–0.200			60–150	100–400	0.040–0.120	0.060–0.200
	60–150	100–400	0.060–0.200			60–150	100–400	0.040–0.120	0.060–0.150
		60–100	0.060–0.150				60–100	0.040–0.120	0.060–0.150
	Special materials								
		30–50	0.020–0.080				30–50	0.020–0.060	0.040–0.100
		30–60	0.015–0.060				30–50	0.010–0.020	0.015–0.080
	Titanium								
	15–40	30–80	0.030–0.100	30–50	0.130–0.200	15–40	30–80	0.015–0.080	0.030–0.150
	15–40	30–80	0.030–0.080	20–40	0.130–0.200	15–40	30–80	0.015–0.080	0.030–0.150
	15–40	30–60	0.030–0.080	20–40	0.130–0.200	15–40	30–60	0.015–0.060	0.030–0.120
	Nickel								
		30–60	0.050–0.100	30–50	0.060–0.120		30–60	0.020–0.060	0.040–0.100
		15–35	0.030–0.080	30–50	0.050–0.110		30–60	0.020–0.060	0.040–0.100
		15–35	0.030–0.080	10–30	0.050–0.110		30–40	0.015–0.050	0.030–0.080
	Steel materials								
	20–60	40–80	0.030–0.100	70–95	0.130–0.200	20–60	40–80	0.010–0.050	0.030–0.100
	20–40	30–60	0.015–0.100	40–60	0.100–0.180	20–40	30–60	0.010–0.020	0.015–0.080

APPLICATION TABLE FOR THREAD MILLING CUTTERS

cutting speed

$$v_c = \frac{n \cdot \pi \cdot d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c \cdot 1000}{\pi \cdot d_1}$$

feed rate outer contour

$$v_{fA} = v_{fAA} = n \cdot f_z \cdot z$$

How to proceed

1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type and page

GT = thread depth

ZBGF H



model		LH BA	d ≤ 3	d > 3 ≤ 5
M	p.	205		
MF	p.	205		
G	p.	206		
UNC / UNF	p.	207 / 208		
NPT / NPTF	p.			

	Application	Examples of materials	R _m N/mm ²	HB	HRC	vc m/min	fz mm	
P	Steel materials							
	Magnetic soft steel	FeP01	> 100 < 450			80–90	0.011–0.015	0.018–0.023
	Construction steel / case hardening steel	En40B	> 300 < 700			75–80	0.011–0.015	0.017–0.023
	Carbon steel	080M46	> 400 < 950			65–75	0.011–0.014	0.017–0.022
	Alloyed / heat-treatable steel	En19A	> 450 < 950			65–75	0.011–0.014	0.017–0.022
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	60–70	0.010–0.014	0.016–0.021
M	Stainless steel							
	Ferritic / martensitic steel	420S37	> 450 < 1200			40–45	0.009–0.015	0.015–0.019
	Austenitic steel	320S18	> 400 < 950			35–40	0.009–0.015	0.015–0.019
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	30–40	0.008–0.012	0.013–0.018
K	Cast iron							
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300		80–90	0.011–0.015	0.018–0.023
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		75–85	0.011–0.015	0.018–0.023
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200		70–80	0.011–0.015	0.018–0.023
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32	50–55	0.010–0.013	0.016–0.020
N	Copper							
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120				
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200				
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200				
	Copper–alu–nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200				
	Copper–alu–nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220				
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190				
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47			
	Aluminium / Magnesium							
	Alu wrought alloy Si ≤ 0,5%	1B	> 100 < 700	> 30 < 200				
	Alu alloyed Si ≤ 6%	LM22	> 150 < 700	> 45 < 200				
	Alu alloyed Si > 6%	LM9	> 150 < 900	> 45 < 265		80–90	0.011–0.015	0.018–0.023
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150				
	Synthetics							
	Thermoplastic (long chipping)	Styreme	> 20 < 80					
	Duroplastic (short chipping)	Toufnell	> 80 < 110					
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440				
	Special materials							
	Cobalt alloyed		> 400 < 2000	> 120 < 590				
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52			
	TiC–hard material			> 440 < 495	> 47 < 50			
	Graphite		> 38 < 60					
S	Titanium							
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200		45–54	0.009–0.012	0.015–0.019
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27	40–50	0.009–0.012	0.015–0.019
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40	35–45	0.009–0.012	0.015–0.019
	Nickel							
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175				
H	Steel materials							
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	50–55	0.010–0.014	0.016–0.021
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48	50–55	0.010–0.013	0.016–0.020
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 56	30–40	0.009–0.012	0.014–0.018
	Hardened steel	BA2			> 56 < 63	30–40	0.008–0.011	0.013–0.016

ZBGF H			BGF W					
								
d > 5 ≤ 8	d > 8 ≤ 12		KA	KA FNT	d < 8		d > 8	
				fb mm/U	fz mm	fb mm/U	fz mm	
			211	211				
			212	212				
fz mm		vc m/min		fz mm				
Steel materials								
	0.031–0.038	0.045–0.050						
	0.030–0.038	0.043–0.050						
	0.030–0.037	0.043–0.048						
	0.030–0.037	0.043–0.048						
	0.028–0.035	0.041–0.046						
Stainless steel								
	0.026–0.031	0.037–0.041						
	0.026–0.031	0.037–0.041						
	0.022–0.029	0.032–0.039						
Cast iron								
	0.031–0.038	0.045–0.050	80–120	100–200	0.100–0.150	0.020–0.050	0.150–0.220	0.050–0.100
	0.031–0.038	0.045–0.050	80–120	100–200	0.100–0.150	0.020–0.050	0.150–0.220	0.050–0.100
	0.031–0.038	0.045–0.050	80–120	100–200	0.100–0.150	0.020–0.050	0.150–0.220	0.050–0.100
	0.022–0.027	0.032–0.036	50–80	80–120	0.070–0.120	0.015–0.040	0.120–0.200	0.040–0.080
Copper								
			100–300		0.060–0.100	0.030–0.060	0.100–0.300	0.060–0.100
Aluminium / Magnesium								
			100–300	150–400	0.100–0.250	0.030–0.060	0.250–0.300	0.060–0.100
			100–300	150–400	0.100–0.250	0.030–0.060	0.250–0.300	0.060–0.100
	0.031–0.038	0.045–0.050	100–300	150–400	0.100–0.250	0.030–0.060	0.250–0.300	0.060–0.100
			100–200	100–250	0.100–0.250	0.030–0.060	0.250–0.300	0.060–0.100
Synthetics								
			60–120	60–120	0.100–0.250	0.030–0.060	0.250–0.300	0.060–0.100
			60–100	60–100	0.100–0.250	0.030–0.060	0.250–0.300	0.060–0.100
			40–60	60–80	0.100–0.150	0.020–0.050	0.150–0.250	0.050–0.080
Special materials								
Titanium								
	0.026–0.031	0.037–0.041						
	0.026–0.031	0.037–0.041						
	0.026–0.031	0.037–0.041						
Nickel								
Steel materials								
	0.027–0.035	0.039–0.046						
	0.027–0.033	0.039–0.044						
	0.024–0.029	0.035–0.039						
	0.025–0.027	0.032–0.036						

APPLICATION TABLE FOR THREAD MILLING CUTTERS

cutting speed

$$v_c = \frac{n \cdot \pi \cdot d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c \cdot 1000}{\pi \cdot d_1}$$

feed rate outer contour

$$v_{fA} = v_{fAA} = n \cdot f_z \cdot z$$

How to proceed

1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type and page

GT = thread depth

BFW / GFK



BFW-017052-G05
BFW-017076-G05
BFW-020063-G1
BFW-020095-G1
GFK-02002008-G1

BFW-030071-G2
BFW-030105-G2
GFK-03003012-G2

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	Application	Examples of materials	R _m N/mm ²	HB	HRC	vc m/min	fz mm	
P	Steel materials							
	Magnetic soft steel	FeP01	> 100 < 450			170–200	0.120–0.230	0.130–0.390
	Construction steel / case hardening steel	En40B	> 300 < 700			170–200	0.120–0.230	0.130–0.390
	Carbon steel	080M46	> 400 < 950			170–200	0.120–0.230	0.130–0.390
	Alloyed / heat-treatable steel	En19A	> 450 < 950			170–200	0.120–0.230	0.130–0.390
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	100–150	0.120–0.230	0.130–0.390
M	Steel materials							
	Ferritic / martensitic steel	420S37	> 450 < 1200			70–100	0.100–0.200	0.110–0.350
	Austenitic steel	320S18	> 400 < 950			70–100	0.100–0.200	0.110–0.350
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	70–100	0.100–0.200	0.110–0.350
K	Cast iron							
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300		170–200	0.120–0.230	0.130–0.390
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		170–200	0.120–0.230	0.130–0.390
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200		170–200	0.120–0.230	0.130–0.390
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32	170–200	0.120–0.230	0.130–0.390
N	Copper							
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120		170–200	0.120–0.230	0.130–0.390
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200		170–200	0.120–0.230	0.130–0.390
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		170–200	0.120–0.230	0.130–0.390
	Copper–alu–nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200		170–200	0.120–0.230	0.130–0.390
	Copper–alu–nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220		170–200	0.120–0.230	0.130–0.390
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190		170–200	0.120–0.230	0.130–0.390
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47	70–100	0.100–0.200	0.110–0.350
	Aluminium / Magnesium							
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200		300–400	0.120–0.230	0.130–0.390
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		300–400	0.120–0.230	0.130–0.390
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		300–400	0.120–0.230	0.130–0.390
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150		300–400	0.120–0.230	0.130–0.390
	Synthetics							
	Thermoplastic (long chipping)	Styreme	> 20 < 80			150–300	0.120–0.230	0.130–0.390
	Duroplastic (short chipping)	Toufnell	> 80 < 110			150–300	0.120–0.230	0.130–0.390
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440		70–100	0.120–0.230	0.130–0.390
	Special materials							
	Cobalt alloyed		> 400 < 2000	> 120 < 590		70–100	0.100–0.200	0.110–0.350
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52			
	TiC–hard material			> 440 < 495	> 47 < 50			
	Graphite		> 38 < 60					
S	Titanium							
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200		70–100	0.100–0.200	0.110–0.350
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27	70–100	0.100–0.200	0.110–0.350
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40	70–100	0.100–0.200	0.110–0.350
	Nickel							
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175		70–100	0.100–0.200	0.110–0.350
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39	70–100	0.100–0.200	0.110–0.350
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48	70–100	0.100–0.200	0.110–0.350
H	Steel materials							
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	100–150	0.120–0.230	0.130–0.390
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48	70–100	0.120–0.230	0.130–0.390
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 56			
	Hardened steel	BA2			> 56 < 63			

BFW / GFK			AFK					
								
BFW-033100-G2 BFW-033150-G2 GFK-03303012-G2	BFW-050150-G3 BFW-050200-G3 GFK-04203516-G3 GFK-05003516-G3		AFK-042040-G1 AFK-042040-G2 AFK-042040-G3	AFK-052040-G2 AFK-052040-G3	AFK-063050-G2 AFK-063050-G3	AFK-080050-G2 AFK-080050-G3	AFK-100050-G3	
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fz mm		vc m/min	fz mm					
Steel materials								
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	100–150	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
Steel materials								
0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690	
0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690	
0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690	
Cast iron								
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
Copper								
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690	
Aluminium / Magnesium								
0.130–0.390	0.150–0.500	300–400	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	300–400	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	300–400	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	300–400	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
Synthetics								
0.130–0.390	0.150–0.500	150–300	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	150–300	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	70–100	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
Special materials								
0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690	
Titanium								
0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690	
0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690	
0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690	
Nickel								
0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690	
0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690	
0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690	
Steel materials								
0.130–0.390	0.150–0.500	100–150	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	
0.130–0.390	0.150–0.500	70–100	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030	

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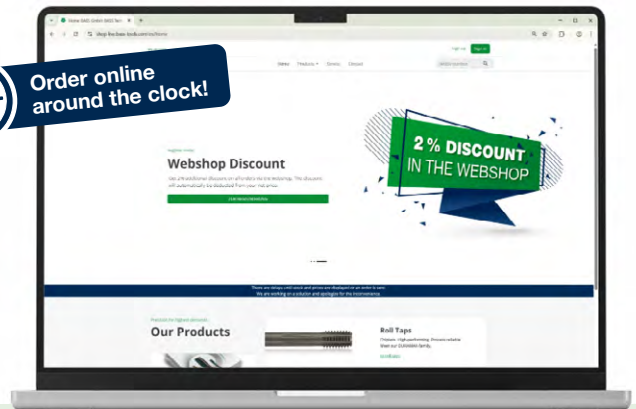
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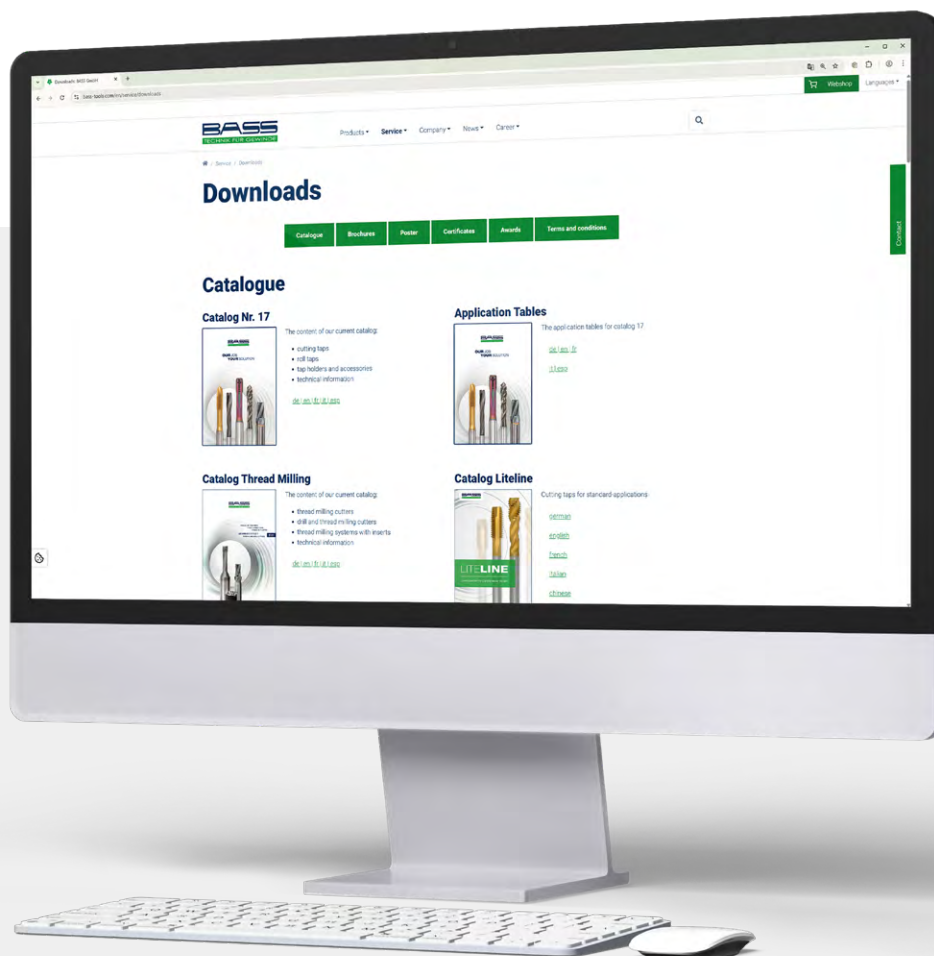
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