






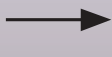










## Cutting Speed ( $V_c$ ) and Material Factor ( $F_m$ )

MATERIAL		Hardness HB	Tensile Strength N/mm <sup>2</sup>	Cutting Speed ( $V_c$ ) m/min	Material Factor ( $F_m$ )
Steel	Low carbon, C < 0,25%	< 120	< 400	150 - 200	1,2
	Medium carbon, C < 0,55%	< 200	< 700	120 - 170	1,1
	High carbon, C < 0,85%	< 250	< 850	110 - 150	1,0
	Low alloy	< 250	< 850	100 - 140	1,0
	High alloy	< 350	< 1200	70 - 110	0,9
	Hardened, HRC < 45			60 - 100	0,8
	Hardened, HRC < 55			30 - 60	0,7
	Hardened, HRC < 65			20 - 40	0,6
Cast iron	Lamellar graphite	< 150	< 500	130 - 180	1,2
	Lamellar graphite	< 300	< 1000	100 - 150	1,1
	Nodular graphite, malleable	< 200	< 700	100 - 150	1,0
	Nodular graphite, malleable	< 300	< 1000	80 - 120	0,9
Stainless steel	Free machining	< 250	< 850	130 - 180	1,0
	Austenitic	< 250	< 850	90 - 140	0,9
	Ferritic and austenitic	< 300	< 1000	80 - 120	0,8
Titanium	Unalloyed	< 200	< 700	60 - 80	0,8
	Alloyed	< 270	< 900	50 - 70	0,7
	Alloyed	< 350	< 1250	30 - 50	0,6
Nickel	Unalloyed	< 150	< 500	80 - 120	0,8
	Alloyed	< 270	< 900	60 - 80	0,7
	Alloyed	< 350	< 1250	50 - 70	0,6
Copper	Unalloyed	< 100	< 350	150 - 250	1,0
	Brass, bronze	< 200	< 700	130 - 180	1,0
	High strength bronze	< 470	< 1500	60 - 80	0,8
Aluminium	Unalloyed	< 100	< 350	500 - 900	1,4
	Alloyed, Si < 0.5%	< 150	< 500	400 - 800	1,3
	Alloyed, Si < 10%	< 120	< 400	300 - 500	1,2
	Alloyed, Si > 10%	< 120	< 400	200 - 400	1,1
Inconel	718	< 370		50 - 70	0,6
Graphite				300 - 500	1,0

## Threading Methods

Tool	RIGHT HAND THREAD		
	Anvil	Rotation	Direction
SER	AE +		
SEL	AI -		
SIR	AI +		
SIL	AE -		

Tool	LEFT HAND THREAD		
	Anvil	Rotation	Direction
SEL	AI +		
SER	AE -		
SIL	AE +		
SIR	AI -		

### Number of Passes

ISO	Pitch			Material Factor ( $F_m$ )									
	UN	W	NPT	0,6	0,7	0,8	0,9	1,0	1,1	1,2	1,3	1,4	
0,5				7	6	5	4	4	4	4	4	4	
0,75	32	28		8	6	6	5	4	4	4	4	4	
1,0	28-24	19		8	7	6	6	5	5	4	4	4	
1,25	20			9	8	7	6	6	5	5	4	4	
1,5	18-16	14		10	9	8	7	6	5	5	5	4	
1,75	14			12	10	9	8	7	6	6	5	5	
2,0	13-12		27	14	12	11	9	8	8	7	7	6	
2,5	11-10	11	18	16	14	13	11	10	9	8	8	7	
3,0	9-8		14	18	16	14	12	11	10	9	8	8	
3,5	7			20	17	15	13	12	11	10	9	9	
4,0	6		11,5	22	19	16	14	13	12	11	10	9	
4,5				23	20	17	15	14	12	11	10	10	
5,0	5			24	20	18	16	14	13	12	11	10	
5,5	4,5		8	25	21	19	17	15	14	13	12	11	
6,0	4			27	23	20	18	16	15	13	12	11	

### Radial Infeed Each Pass

PASS	Percentage of the total infeed																
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	33	28	25	22	20	19	18	16	14	12	11	11	11	11	10	10	9
2	27	24	20	18	17	16	15	14	13	11	10	10	10	10	10	9	9
3	22	19	17	16	15	14	13	12	11	10	9	9	9	9	9	8	8
4	18	16	15	14	13	12	11	10	9	9	8	8	8	9	8	8	8
5		13	13	12	11	10	9	8	8	8	8	8	8	8	8	7	7
6			10	10	10	9	8	8	8	8	8	7	7	7	7	6	6
7				8	8	8	7	8	8	7	7	7	7	6	6	6	6
8					6	7	7	7	7	7	7	7	6	6	6	6	6
9						5	7	7	7	7	7	6	6	5	6	5	5
10							5	6	6	6	6	6	5	5	5	5	5
11								4	5	6	6	5	5	5	5	5	5
12									4	5	5	5	5	4	4	5	5
13										4	4	4	4	4	4	4	4
14											3	4	4	4	3	4	4
15												3	3	3	3	4	3
16													2	2	2	3	3
17														2	2	2	2
18															2	1,5	2
19																1,5	1,5
20																	1,5

### Carbide Grades

**FC** Micrograin Carbide with TiAlN coating. Allround Grade with high heat resistance. Use cutting data according to the tables.

**BC** Micrograin Carbide with TiN coating. Suitable for internal thread turning of small dimensions. Cutting speed 40% less than FC.

**HC** Micrograin Carbide with AlTiSiN coating. Allround Grade with high hardness and heat resistance. Use cutting data according to the tables.