Cutting Speed (V_c) and Material Factor (F_m)

MATERIAL		Hardness HB	Tensile Strenght N/mm²	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

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

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

CUTTING DATA

SmiCut STS

Number of Passes

Pitch				Material Factor (F_m)								
ISO	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

	Percentage of the total infeed																
PASS	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	9	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.