



Speeds & Feeds - Threading Tools

Speeds & Feeds listed are based on a tool that has a reach 3X the min. bore diameter. These are considered safe starting parameters and will vary by application. To achieve optimal Speeds & Feeds please contact Micro 100 tech support at 800-421-8065.

Quick Change

QIT UN Threads - Single Point
 QITL UN Threads - Single Point - Left Hand
 QTT UN Topping - Single Point
 QTMT Metric Topping - Single Point

Standard

IT UN Threads - Single Point - Right Hand
 ITL UN Threads - Single Point - Left Hand
 ITM Metric Shank - Single Point - Right Hand
 IAT ACME Threads
 SAT Stub ACME Threads
 IDRT UN Threads - Right Hand - Brazed
 IDLT UN Threads - Left Hand - Brazed
 TT UN Topping - Single Point
 TMT Metric Topping - Single Point

Material Guide		Hardness	SFM	Feed
WROUGHT ALUMINUM ALLOY	2014, 5062, 6061, 7050, 7075, 7475	<75 HRB	600	
CAST ALUMINUM ALLOY	319.0, 328.0, 355.0, 360.0, 380.0, 383.0, 390.0, 520.0, 535.0	<75 HRB	400	
COPPER ALLOY	Cu-ETP, CuBe2, CuZn30, CuZn36Pb3, CuZn10, CuSn5	<75 HRB	450	
CARBON STEEL	10XX, 11XX, 12XX, 12LXX, ASTM A27, ASTM A36	<75 HRB 75 - 98 HRB 21 - 36 HRC	200	
LOW ALLOY STEEL	13XX, 41XX, 43XX, 51XX, 86XX, 93XX	75 - 98 HRB 21 - 36 HRC 36 - 50 HRC >50 HRC	150 150 100 60	
TOOL STEEL	A2, H13, L6, P20, S7	75 - 98 HRB 21 - 36 HRC 36 - 50 HRC >50 HRC	100 80 65 35	
SPECIALTY STEEL	300M, Invar 36, Kovar, Maraging 200, Maraging 250, Maraging 300, Maraging 350	<75 HRB 75 - 98 HRB 21 - 36 HRC 36 - 50 HRC >50 HRC	75 65 50 40 35	
AUSTENITIC STAINLESS STEEL	Nitronic 50, Nitronic 60, 301, 303, 304, 304L, Incoloy 27-7MO, 316, 316L, 321, 347	75 - 98 HRB 21 - 36 HRC 36 - 50 HRC	140 110 50	
MARTENSITIC & FERRITIC STAINLESS STEEL	403, 410, 416, 420, 440, 430, 446	75 - 98 HRB 21 - 36 HRC	160 115	
PH STAINLESS STEEL	15-5, 17-4, Carpenter 450, Carpenter 465	21 - 36 HRC 36 - 50 HRC	100 73	
GRAY CAST IRON	AE J431, ASTM A48	75 - 98 HRB 21 - 36 HRC	205 185	
MALLEABLE CAST IRON	ASTM A47, ASTM A220, ASTM A602	75 - 98 HRB 21 - 36 HRC	173 168	
NODULAR (DUCTILE) CAST IRON	ASTM A536, ASTM 897	75 - 98 HRB 21 - 36 HRC 36 - 50 HRC	155 130 68	
PURE NICKEL	Nickel 200, Nickel 201	<75 HRB 75 - 98 HRB	143 125	
NICKEL ALLOY	Hastelloy C-22, Inconel 625, Waspaloy, René 41, Inconel 718, Incoloy 20	75 - 98 HRB 21 - 36 HRC 36 - 50 HRC	55 38 35	
PURE TITANIUM	Ti Grade 1, Ti Grade 2, Ti Grade 3, Ti Grade 4, Ti Grade 7, Ti Grade 12	<75 HRB 75 - 98 HRB 21 - 36 HRC	150 138 125	
TITANIUM ALLOY	Ti 3Al-2.5V, Ti 6Al-4V, Ti 10V-2Fe-3Al	21 - 28 HRC 29 - 36 HRC	100 75	
COBALT ALLOY	ASTM F562, ASTM F90, ASTM F75, ASTM F799	75 - 98 HRB 21 - 36 HRC 36 - 50 HRC	105 85 33	

Feeds are Pitch Specific.
 Feed per revolution = Pitch = (1.0 / TPI)

Example: 1/4-20 UN Thread = 1/20 = 0.050 IPR

T.P.I	8	10	12	14	16	18	20	24	28	32	36	40	44	48	56
Metric Conversion	3.18	2.54	2.12	1.81	1.59	1.41	1.27	1.06	0.91	0.80	0.71	0.64	0.58	0.53	0.45
Number of Passes	12-14	10-12	8-10	8-10	8-10	6-8	6-8	6-8	6-8	4-6	4-6	4-6	4-6	4-6	4-6

Conditions based on Mild Steel and Non-Ferrous materials. Harder materials and/or High Temperature Alloys may require more passes. The data given in the chart above should always be considered safe starting conditions and may need to be adjusted to obtain optimal machining performance.

Helpful Hints

- Program in G96 (Constant Surface Footage On) in conjunction with G50 (Maximum Spindle Speed) to achieve best part finish
- Not all machines are capable of G96 while threading; please consult your machine manufacturer
- Calculate RPM by part diameter being cut
- When using coated tools, increase SFM 5% - 10%