Auronix

PRECISION FOR A BETTER TOMORROW

CUTTING PARAMETERS
MICRO BORING UNIT

Optimized cutting parameters for Micro Boring Unit (MBU) to achieve high precision, excellent surface finish and longer tool life.

UNIT HIGHLIGHTS

- Adjustable Fine Boring Unit
- High Accuracy
- Superior Surface Finish
- Stable & Reliable Machining

CUTTING PARAMETERS – MICRO BORING UNIT

MATERIAL GROUP	MATERIAL	MATERIAL PROPERTIES	BRINELL HARDNESS HB	Vc m/min	FEED mm/rev	DEPTH OF CUT mm
P STEEL	Unalloyed steel	Ca. 0.15% camealed	125	120 – 200	0.10 – 0.15	0.10 – 0.30
		Ca. 0.45% camealed	150	100 – 185	0.10 – 0.15	0.10 – 0.30
		Ca. 0.75%C Heat Treated	170	100 – 180	0.10 – 0.15	0.10 – 0.30
	Low-alloy steel	Annealed	180	100 – 180	0.10 – 0.30	0.10 – 0.30
		Heat Treated	275	100 – 180	0.10 – 0.15	0.10 – 0.30
		Heat Treated	350	100 – 170	0.10 – 0.15	0.10 – 0.30
	High Alloy steel	Annealed	200	100 – 180	0.10 – 0.15	0.10 – 0.30
		Annealed in Temp	325	100 – 170	0.10 – 0.15	0.10 – 0.30
	Steel cast	Ferritic / martensitic, Annealed	200	100 – 180	0.10 – 0.15	0.10 – 0.30
		Martensitic Hardened and Temp	200	100 – 180	0.10 – 0.30	0.10 – 0.30
M STAINLESS STEEL	Stainless Steel Ferritic	–	200	60 – 130	0.05 – 0.10	0.10 – 0.20
	Unhardenable	–	200	60 – 130	0.05 – 0.10	0.10 – 0.20
	Hardened	–	300	50 – 110	0.05 – 0.10	0.10 – 0.20
	Stainless Steel Austenitic	Austenitic	180	60 – 130	0.05 – 0.10	0.10 – 0.20
	Duplex	–	200	60 – 130	0.05 – 0.10	0.10 – 0.20
K CAST IRON	Grey Cast Iron	Perlitic / Ferritic	180	70 – 160	0.15 – 0.25	0.10 – 0.20
	Perlitic (Martensitic)	–	260	60 – 150	0.15 – 0.25	0.10 – 0.20
	Nodular Graphite Cast Iron	Ferritic	160	70 – 160	0.15 – 0.25	0.10 – 0.20
	Perlitic	–	260	60 – 160	0.15 – 0.25	0.10 – 0.20
	Malleable Cast Iron	Ferritic	130	70 – 160	0.15 – 0.25	0.10 – 0.20
	Perlitic	–	230	60 – 150	0.15 – 0.25	0.10 – 0.20

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N NON-FERROUS MATERIALS	Aluminium alloys Forge ironed	–	60	120 – 300	0.05 – 0.10	0.10 – 0.20
	Rolled, Non Hardenable	–	–	120 – 350	0.05 – 0.10	0.10 – 0.20
	Aluminium Alloys	–	75	180 – 400	0.05 – 0.10	0.10 – 0.20
	Casted, Non Hardenable	–	–	180 – 400	0.05 – 0.10	0.10 – 0.20
	Copper and Copper Alloys	–	90	100 – 280	0.05 – 0.10	0.10 – 0.20
		–	100	100 – 280	0.05 – 0.10	0.10 – 0.20
	Brass	–	–	100 – 300	0.05 – 0.10	0.10 – 0.20
	Bronze, non Leaded Copper	–	–	100 – 300	0.05 – 0.10	0.10 – 0.20
S HEAT RESISTANT ALLOYS & TITANIUM	Heat Resistance Alloys	Fe based heat treated	200	60 – 130	0.05 – 0.15	0.10 – 0.20
	Fe based aged	–	280	60 – 130	0.05 – 0.15	0.10 – 0.20
	Ni or Co based Heat Treated	–	250	60 – 130	0.05 – 0.15	0.10 – 0.20
	Ni or Co based aged	–	350	60 – 130	0.05 – 0.15	0.10 – 0.20
	Titanium Alloys – Pure Titanium	400 Rm	–	50 – 90	0.05 – 0.15	0.10 – 0.20
			–	50 – 90	0.05 – 0.15	0.10 – 0.20
	Alpha and Beta-Alloys Hardened	1050 Rm	–	50 – 90	0.05 – 0.15	0.10 – 0.20
			–	50 – 90	0.05 – 0.15	0.10 – 0.20
H HARDENED MATERIALS	Heat Treated	45 – 50 HRC	–	60 – 140	0.05 – 0.10	0.10 – 0.20
	Hardened Steel	50 – 60 HRC	–	60 – 140	0.05 – 0.10	0.10 – 0.20

RECOMMENDED TORQUE VALUES (GUIDELINE)

Component	Screw Size	Recommended Torque (Nm)	(Flag Type Torx Key)
MBU Clamping Screw	M3	1.2 – 1.5 Nm	T9
	M4	2.0 – 2.5 Nm	T15
	M2	0.6 – 0.9 Nm	T6
Insert Screw	M2.2	0.7 – 1.0 Nm	T7
	M2.5	0.8 – 1.0 Nm	T8
	M3.0	1.2 – 1.5 Nm	T9

Note: Always follow manufacturer catalogue / instruction for exact torque values for your specific configuration.