

# MICRO END MILLS

## Technical Information

General Purpose Carbide Micro End Mills												
Material Guide	Conditions	SFM	Feed Per Tooth									
			.005"	.015"	.015"	.003"	.003"	.045"	.060"	.075"	.090"	.105"
			.015"	.003"	.045"	.060"	.075"	.090"	.105"	.125"		
COBALT BASE ALLOYS	Stellite, HS-21, Haynes 25/188, X-40, L-605	Slotting at $\leq 7\%$ of D	50	.0001	.0001	.0002	.0002	.0003	.0003	.0004	.0004	
		Profiling at 5% of D Axial/ $\leq 20\%$ of D Radial	80	.0001	.0001	.0002	.0002	.0003	.0003	.0004	.0004	
NICKEL BASE ALLOYS	Inconel-625/718, Waspalloy, Rene, Hastelloy	Slotting at $\leq 7\%$ of D	40	.0001	.0001	.0002	.0002	.0003	.0003	.0004	.0004	
		Profiling at 5% of D Axial/ $\leq 20\%$ of D Radial	60	.0001	.0001	.0002	.0002	.0003	.0003	.0004	.0004	
IRON BASE ALLOYS	Incoloy 800-802, Multimet N-155, Timkin 16-25-6, Carpeneter 22-b3	Slotting at $\leq 7\%$ of D	80	.0001	.0001	.0002	.0002	.0003	.0003	.0004	.0004	
		Profiling at 5% of D Axial/ $\leq 20\%$ of D Radial	100	.0001	.0001	.0002	.0002	.0003	.0003	.0004	.0004	
MONEL	Monel-65% Nickel	Slotting at $\leq 7\%$ of D	40	.0001	.0001	.0002	.0002	.0003	.0003	.0004	.0004	
		Profiling at 5% of D Axial/ $\leq 20\%$ of D Radial	60	.0001	.0001	.0002	.0002	.0003	.0003	.0004	.0004	
TITANIUM ALLOYS	Commercially Pure, 6AL-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si	Slotting at $\leq 15\%$ of D	125	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0005	
		Profiling at 6% of D Axial/ $\leq 20\%$ of D Radial	250	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0005	
STAINLESS STEEL (PRECIPITATION)	13/8, 15/5, 17-4, AM-350/355	Slotting at $\leq 10\%$ of D	90	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0005	
		Profiling at 6% of D Axial/ $\leq 20\%$ of D Radial	250	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0005	
STAINLESS STEEL (AUSTENITIC)	200 Series, 302, 303, 304, 316, 304L, 316L	Slotting at $\leq 15\%$ of D	100	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0005	
		Profiling at 6% of D Axial/ $\leq 30\%$ of D Radial	250	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0005	
STAINLESS STEEL (MARTENSITIC)	403, 410, 416, 440	Slotting at $\leq 15\%$ of D	100	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0005	
		Profiling at 6% of D Axial/ $\leq 30\%$ of D Radial	250	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0005	
HIGH STRENGTH TOOL STEELS	4140, 4340, 6150, 5210, A2, D2 P20, H11, H13, S2, 01	Slotting at $\leq 15\%$ of D	100	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0005	
		Profiling at 6% of D Axial/ $\leq 30\%$ of D Radial	180	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0005	
MEDIUM ALLOY STEELS	200, 250, 300	Slotting at $\leq 15\%$ of D	125	.0003	.0003	.0004	.0004	.0005	.0005	.0006	.0006	
		Profiling at 6% of D Axial/ $\leq 30\%$ of D Radial	250	.0003	.0003	.0004	.0004	.0005	.0005	.0006	.0006	
CARBON STEELS	A36, 12L14, 12L15, 1005, 1018, 1020, 1108- 1119, 1213-1215, 1513-1518, 4012, 5015, 9310	Slotting at $\leq 15\%$ of D	150	.0004	.0004	.0005	.0005	.0006	.0006	.0007	.0007	
		Profiling at 6% of D Axial/ $\leq 35\%$ of D Radial	300	.0004	.0004	.0005	.0005	.0006	.0006	.0007	.0007	
DUCTILE	Ductile Cast Irons	Slotting at $\leq 15\%$ of D	100	.0004	.0004	.0005	.0005	.0006	.0006	.0007	.0007	
		Profiling at 10% of D Axial/ $\leq 25\%$ of D Radial	250	.0004	.0004	.0005	.0005	.0006	.0006	.0007	.0007	
CAST IRONS	Gray Cast Irons	Slotting at $\leq 25\%$ of D	125	.0004	.0004	.0005	.0005	.0008	.0008	.0010	.0010	
		Profiling at 10% of D Axial/ $\leq 35\%$ of D Radial	400	.0004	.0004	.0005	.0005	.0008	.0008	.0010	.0010	
ALUMINUM	2014, 2024, 6061-(T1-T6), 7075, Die Cast, Extruded	Slotting at $\leq 15\%$ of D	650	.0004	.0004	.0005	.0006	.0008	.0008	.0010	.0010	
		Profiling at 10% of D Axial/ $\leq 35\%$ of D Radial	775	.0004	.0004	.0005	.0006	.0008	.0008	.0010	.0010	

These values are a starting point based on an uncoated tool.

For AlTiN Coated tools increase SFM values by up to +40%