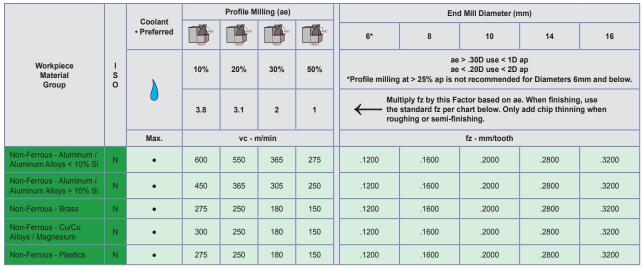
TuffCut® X-AL

138CE Recommended Cutting Data - Profile Milling Inch

Workpiece Material Group	I S O	Coolant • Preferred	Profile Milling (ae)				End Mill Diameter								
							1/8*	3/16*	1/4*	5/16	3/8	1/2	5/8	3/4	1
		8	10%	20%	30%	50%		ae > .30D use < 1D ap ae < .20D use < 2D ap							
			10 /0	20 /0	30 /0	30 /0	*	Profile Mil	ling at > 25	% ap is not	ded for Diameters 1/4" and below.				
			3.8	3.1	2	1	←	Multiply fz by this Factor based on ae. When finishing, use the standard fz per chart below. Only add chip thinning when roughing or semi-finishing.							
		Max.	vc - SFM				fz - in/tooth								
Non-Ferrous - Aluminum / Aluminum Alloys < 10% Si	N	•	2000	1800	1200	900	.0025	.0037	.0050	.0062	.0075	.0100	.0125	.0150	.0200
Non-Ferrous - Aluminum / Aluminum Alloys > 10% Si	N	•	1500	1200	1000	800	.0025	.0037	.0050	.0062	.0075	.0100	.0125	.0150	.0200
Non-Ferrous - Brass	N	•	900	800	600	500	.0025	.0037	.0050	.0062	.0075	.0100	.0125	.0150	.0200
Non-Ferrous - Cu/Cu Alloys / Magnesium	N	•	1000	800	600	500	.0025	.0037	.0050	.0062	.0075	.0100	.0125	.0150	.0200
Non-Ferrous - Plastics	N	•	900	800	600	500	.0025	.0037	.0050	.0062	.0075	.0100	.0125	.0150	.0200

Above 20,000 RPM, Tool Balancing Required

138CE Recommended Cutting Data - Profile Milling Metric



Above 20,000 RPM, Tool Balancing Required

Spindle Maximum - Should the calculated spindle speed be more than your actual spindle maximum, use this formula: (Calculated Feed x Spindle Maximum)/Calculated Speed

TuffCut® X-AL

138CE Recommended Cutting Data - Slotting Inch

Workpiece Material Group	1 S O	Coolant • Preferred	Slotting			End Mill Diameter								
		0				1/8*	3/16*	1/4*	5/16	3/8	1/2	5/8	3/4	1
			25%	50%	100%		*Slotting at > 25% ap is not recommended for diameters 1/4" and below.							
		Max.	vc - SFM			fz - in/tooth								
Non-Ferrous - Aluminum / Aluminum Alloys < 10% Si	N	•	2000	1500	1000	.0012	.0018	.0025	.0031	.0037	.0050	.0065	.0075	.0100
Non-Ferrous - Aluminum / Aluminum Alloys > 10% Si	N	•	1500	1200	800	.0012	.0018	.0025	.0031	.0037	.0050	.0065	.0075	.0100
Non-Ferrous - Brass	N	•	600	500	400	.0018	.0025	.0032	.0040	.0050	.0065	.0075	.0100	.0120
Non-Ferrous - Cu/Cu Alloys / Magnesium	N	•	500	400	300	.0018	.0025	.0032	.0040	.0050	.0065	.0075	.0100	.0120
Non-Ferrous - Plastics	N	•	1200	1000	800	.0018	.0025	.0032	.0040	.0050	.0065	.0075	.0100	.0120

Above 20,000 RPM, Tool Balancing Required

138CE Recommended Cutting Data - Slotting Metric

Workpiece Material Group	s o	Coolant • Preferred	Slotting			End Mill Diameter (mm)						
						6*	8	10	14	16	20	
		\	25%	50%	100%	*Slotti	below.					
		Max.	,	vc - m/mir	1	fz - mm/tooth						
Non-Ferrous - Aluminum / Aluminum Alloys < 10% Si	N	•	600	450	300	.0630	.0780	.0930	.1270	.1650	.1900	
Non-Ferrous - Aluminum / Aluminum Alloys > 10% Si	N	•	450	365	250	.0630	.0780	.0930	.1270	.1650	.1900	
Non-Ferrous - Brass	N	•	180	150	120	.0810	.1010	.1270	.1650	.1900	.2540	
Non-Ferrous - Cu/Cu Alloys / Magnesium	N	•	150	120	90	.0810	.1010	.1270	.1650	.1900	.2540	
Non-Ferrous - Plastics	N	•	365	300	250	.0810	.1010	.1270	.1650	.1900	.2540	

Above 20,000 RPM, Tool Balancing Required

Spindle Maximum - Should the calculated spindle speed be more than your actual spindle maximum, use this formula: (Calculated Feed x Spindle Maximum)/Calculated Speed