Kodiak Cutting Tools

HIGH PERFORMANCE ROUGHING ENDMILLS - CARBIDE

CARBIDE ROUGHERS - SFM & CHIP LOAD

MATERIAL	HARDNESS HRc	SFM UNCOATED	SFM ALTIN	SFM ALCRO-MAX	CHIP LOAD PER TOOTH 1/4" - 1/2"	CHIP LOAD PER TOOTH 1/2" - 1"
LOW AND PLAIN CARBON, ALLOY & TOOL STEELS	<19	258 - 345	430 - 575	430 - 690	.0015 - .0030	.0030 - .0045
LOW AND PLAIN CARBON, ALLOY & TOOL STEELS	20 - 30	210 - 258	350 - 430	350 - 516	.0015 - .0030	.0030 - .0045
LOW AND PLAIN CARBON, ALLOY & TOOL STEELS	31 - 40	126 - 192	210 - 320	210 - 384	.0011 - .0021	.0021 - .0032
AUSTENITIC STAINLESS STEELS, 200 AND 300 SERIES 135-275	<28	150 - 300	250 - 500	250 - 600	.0010 - .0025	.0025 - .0040
FERRITIC, MARTENSITIC 400, 500, & PH STAINLESS STEELS	<35	135 - 258	225 - 430	225 - 516	.0015 - .0030	.0030 - .0045
TITANIUM ALLOYS	32 - 43	75 - 129	125 - 215	125 - 258	.0009 - .0018	.0018 - .0027
NICKEL-BASED HIGH TEMPERATURE ALLOYS	<32	39 - 87	65 - 145	65 - 174	.0009 - .0018	.0018 - .0027
NICKEL-BASED HIGH TEMPERATURE ALLOYS	32 - 50	33 - 66	55 - 110	55 - 132	.0009 - .0018	.0018 - .0027
COBALT-BASED HIGH TEMPERATURE ALLOYS	<45	27 - 45	45 - 75	45 - 90	.0009 - .0018	.0018 - .0027

For the long length carbide rougher the SFM should be reduced by 30%.

ENDMILLS - CARBIDE

GENERAL RECOMMENDATIONS

All speed and feed recommendations should be considered only as a starting point. The suggested speed & feed values are recommended for uncoated tools only (except for those of the TERMINATOR whose values are for its Altin coating). When various coatings are applied, SFM may be increased accordingly. These general percentages are as follows under optimal conditions:

TICN = +25% ZRN = +30% ALTIN = +40% ALCRO-MAX = +40 UP TO +60%

RIGIDITY

Maximize rigidity to reduce chatter and increase tool life. Ways to improve rigidity include choosing the largest diameter possible to perform your milling task, use the shortest LOC (Length of Cut) available, and always use the tool holder which offers the shortest gage line (Shortest Tool Holder Length).

CHATTER

If chatter is present increase feed or reduce speed.

Speed and Feed Calculations:

RPM = (3.82 x SFM) ÷ Dia.

IPR = IPM ÷ RPM

SFM = (RPM x Dia.) ÷ 3.82

IPM = IPT(chip load) x No. of Teeth x RPM

IPT(chip load) = IPM ÷ (No. of teeth x RPM)

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