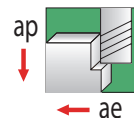


GARR TOOL X7, G7 High Performance Milling Guide

ISO Material	HRC	M/Min. (Vc)	CHIPLOAD PER TOOTH (Fz)					
			8.0mm	10.0mm	12.0mm	16.0mm	20.0mm	
COBALT BASE ALLOYS								
Powdered Metal, Stellite, Hs-21, Haynes 25/188, X-40, L-605	< 40 > 40	37 - 75 30 - 60	.023 - .056 .020 - .051	.033 - .066 .025 - .061	.048 - .091 .036 - .079	.053 - .109 .043 - .097	.066 - .132 .051 - .122	
NICKEL BASE ALLOYS								
Invar, Kovar, Inconel-625/718, Waspaloy, Rene, Hastelloy, A286	< 40 > 40	37 - 75 30 - 60	.023 - .056 .020 - .051	.033 - .066 .025 - .061	.048 - .091 .036 - .079	.053 - .109 .043 - .097	.066 - .132 .051 - .122	
IRON BASE ALLOYS								
Incoloy 800-802, Multimet N-155, Timkin 16-25-6, Carpenter 22-b3	< 40 > 40	37 - 75 30 - 60	.023 - .056 .020 - .051	.033 - .066 .025 - .061	.048 - .091 .036 - .079	.053 - .109 .043 - .097	.066 - .132 .051 - .122	
MONEL								
Monel - 65% Nickel		50 - 90	.023 - .056	.033 - .066	.048 - .091	.053 - .109	.066 - .132	
TITANIUM ALLOYS								
Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si		80 - 150	.025 - .051	.036 - .071	.053 - .102	.066 - .122	.071 - .142	
5553 / Beta Titanium		60 - 110	.025 - .048	.036 - .066	.053 - .091	.066 - .109	.071 - .132	
STAINLESS STEELS								
13/8, 15/5, 17-4, pH Types	< 40 > 40	90 - 150 70 - 110	.020 - .051 .018 - .048	.033 - .066 .025 - .061	.048 - .091 .036 - .079	.056 - .109 .043 - .099	.066 - .132 .051 - .122	
200 Series, 300 Series	< 40 > 40	110 - 170 90 - 140	.020 - .051 .018 - .048	.033 - .074 .025 - .061	.048 - .104 .036 - .079	.056 - .122 .043 - .099	.066 - .147 .051 - .122	
304L, 316L, Nitronic 50	< 40 > 40	100 - 160 70 - 110	.020 - .051 .018 - .048	.033 - .066 .025 - .061	.048 - .091 .036 - .079	.056 - .109 .043 - .099	.066 - .132 .051 - .122	
400 Series	< 40 > 40	90 - 170 70 - 130	.020 - .051 .018 - .048	.033 - .071 .025 - .064	.048 - .097 .036 - .086	.056 - .117 .043 - .104	.066 - .142 .051 - .127	
HIGH STRENGTH TOOL STEELS								
A2, D2, P20, H13, S7, O1	< 40 > 40	90 - 160 60 - 130	.023 - .056 .020 - .046	.041 - .071 .036 - .061	.061 - .097 .056 - .079	.066 - .117 .061 - .097	.081 - .142 .071 - .122	
MEDIUM ALLOY TOOL STEELS								
4140, 4340, 52100, 6150, 8620	< 40 > 40	140 - 200 100 - 150	.023 - .058 .020 - .046	.041 - .074 .036 - .061	.061 - .102 .056 - .084	.066 - .122 .061 - .102	.081 - .147 .071 - .122	
CARBON STEELS								
1000's - 1018, 1020, 12L14	< 40	150 - 240	.023 - .046	.041 - .076	.061 - .109	.066 - .127	.081 - .152	
CAST MATERIAL								
Steel (Malleable)		140 - 210	.025 - .064	.046 - .079	.074 - .117	.079 - .135	.091 - .157	
Ductile Iron		140 - 210	.025 - .064	.046 - .079	.074 - .117	.079 - .135	.091 - .157	
Gray Iron		180 - 235	.028 - .066	.048 - .081	.079 - .122	.086 - .140	.097 - .163	

	Profile/Trochoidal Milling
Axial (ap)	up to 2xD
Radial (ae)	5% - 15% of Dia.



NOTE - DATA DOES NOT REFLECT CHIP THINNING.

SPINDLE INTERFACE MUST BE SCRUTINIZED WHEN USING 16mm DIAMETER AND LARGER END MILLS

NOTE - ABOVE ARE STARTING PARAMETERS ONLY. HIGHER RESULTS MAY BE ACHIEVED WITH OPTIMUM CONDITIONS.