

GARR TOOL High Performance Milling Guide for V5, V5C

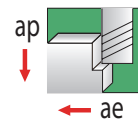
(HIGH EFFICIENCY MILLING)

NOTE - DATA DOES NOT REFLECT CHIP THINNING.

SPINDLE INTERFACE MUST BE SCRUTINIZED WHEN USING 5/8" DIAMETER AND LARGER END MILLS

ISO Material		HRC	SFM (Vc)	CHIPLOAD PER TOOTH (Fz)							
				1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	
S	COBALT BASE ALLOYS										
	Haynes 25/188, Stellite 21, Cobalt Chrome	< 40 > 40	105 - 220 90 - 180	.0009" - .0016" .0007" - .0014"	.0010" - .0019" .0008" - .0017"	.0012" - .0023" .0010" - .0021"	.0018" - .0032" .0014" - .0028"	.0020" - .0038" .0016" - .0034"	.0024" - .0046" .0020" - .0042"	.0036" - .0064" .0028" - .0056"	
	NICKEL BASE ALLOYS										
	Inconel-625/718, Waspaloy, Invar, Rene, Hastelloy, Monel	< 40 > 40	105 - 220 90 - 180	.0009" - .0016" .0007" - .0014"	.0010" - .0019" .0008" - .0017"	.0012" - .0023" .0010" - .0021"	.0018" - .0032" .0014" - .0028"	.0020" - .0038" .0016" - .0034"	.0024" - .0046" .0020" - .0042"	.0036" - .0064" .0028" - .0056"	
	IRON BASE ALLOYS										
	A286, Discaloy, Haynes 556, Carpenter 22, Greek Ascology	< 40 > 40	105 - 220 90 - 180	.0009" - .0016" .0007" - .0014"	.0010" - .0019" .0008" - .0017"	.0012" - .0023" .0010" - .0021"	.0018" - .0032" .0014" - .0028"	.0020" - .0038" .0016" - .0034"	.0024" - .0046" .0020" - .0042"	.0036" - .0064" .0028" - .0056"	
	TITANIUM ALLOYS										
	Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si		240 - 450	.0010" - .0018"	.0011" - .0021"	.0013" - .0025"	.0020" - .0036"	.0022" - .0042"	.0026" - .0050"	.0040" - .0072"	
	5553 / Beta Titanium		180 - 340	.0010" - .0016"	.0011" - .0019"	.0013" - .0023"	.0020" - .0032"	.0022" - .0038"	.0026" - .0046"	.0040" - .0064"	
	M	STAINLESS STEELS									
13/8, 15/5, 17-4, pH Types		< 40 > 40	300 - 450 210 - 330	.0009" - .0016" .0007" - .0014"	.0010" - .0019" .0008" - .0017"	.0012" - .0023" .0010" - .0021"	.0018" - .0032" .0014" - .0028"	.0020" - .0038" .0016" - .0034"	.0024" - .0046" .0020" - .0042"	.0036" - .0064" .0028" - .0056"	
300 Series, 304L, Nitronic 50, Duplex, Super-Austenitic		< 40 > 40	300 - 480 210 - 330	.0009" - .0016" .0007" - .0014"	.0010" - .0019" .0008" - .0017"	.0012" - .0023" .0010" - .0021"	.0018" - .0032" .0014" - .0028"	.0020" - .0038" .0016" - .0034"	.0024" - .0046" .0020" - .0042"	.0036" - .0064" .0028" - .0056"	
400 Series - 403, 405, 420, 455		< 40 > 40	270 - 510 210 - 390	.0009" - .0017" .0007" - .0015"	.0010" - .0020" .0008" - .0018"	.0012" - .0024" .0010" - .0022"	.0018" - .0034" .0014" - .0030"	.0020" - .0040" .0016" - .0036"	.0024" - .0048" .0020" - .0044"	.0036" - .0068" .0028" - .0060"	
HIGH STRENGTH TOOL STEELS											
A2, D2, P20, H13, S7, O1		< 40 > 40	270 - 480 180 - 390	.0009" - .0017" .0007" - .0014"	.0010" - .0020" .0008" - .0017"	.0012" - .0024" .0010" - .0021"	.0018" - .0034" .0014" - .0028"	.0020" - .0040" .0016" - .0034"	.0024" - .0048" .0020" - .0042"	.0036" - .0068" .0028" - .0056"	
P	MEDIUM ALLOY TOOL STEELS										
	4140, 4340, 52100, 6150, 8620	< 40 > 40	420 - 600 300 - 450	.0009" - .0018" .0007" - .0015"	.0010" - .0021" .0008" - .0018"	.0012" - .0025" .0010" - .0022"	.0018" - .0036" .0014" - .0030"	.0020" - .0042" .0016" - .0036"	.0024" - .0050" .0020" - .0044"	.0036" - .0072" .0028" - .0060"	
	CARBON STEELS										
	1000's - 1018, 1020, 12L14	< 40	450 - 720	.0011" - .0019"	.0012" - .0022"	.0014" - .0026"	.0022" - .0038"	.0024" - .0044"	.0028" - .0052"	.0044" - .0076"	
K	CAST MATERIAL										
	Ductile Iron		420 - 630	.0011" - .0019"	.0012" - .0022"	.0014" - .0026"	.0022" - .0038"	.0024" - .0044"	.0028" - .0052"	.0044" - .0076"	
	Gray Iron		540 - 710	.0012" - .0021"	.0013" - .0024"	.0015" - .0028"	.0024" - .0042"	.0026" - .0048"	.0030" - .0056"	.0048" - .0084"	

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



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