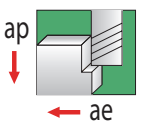
GARR TOOL High Performance Milling Guide for V5, V5C
(HIGH EFFICIENCY MILLING)

NOTE - DATA DOES NOT REFLECT CHIP THINNING.

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

	ISO Material	HRC	M/Min. (Vc)	CHIPLOAD PER TOOTH (Fz) 6.0mm	8.0mm	10.0mm	12.0mm	16.0mm	20.0mm	25.0mm
S	**COBALT BASE ALLOYS**									
	Haynes 25/188, Stellite 21, Cobalt Chrome	< 40 > 40	30 - 70 27 - 55	.023 - .041 .018 - .036	.025 - .048 .020 - .043	.030 - .058 .025 - .053	.046 - .081 .036 - .071	.051 - .097 .041 - .086	.061 - .117 .051 - .107	.091 - .163 .071 - .142
	NICKEL BASE ALLOYS									
	Inconel-625/718, Waspaloy, Invar, Rene, Hastelloy, Monel	< 40 > 40	30 - 70 27 - 55	.023 - .041 .018 - .036	.025 - .048 .020 - .043	.030 - .058 .025 - .053	.046 - .081 .036 - .071	.051 - .097 .041 - .086	.061 - .117 .051 - .107	.091 - .163 .071 - .142
	IRON BASE ALLOYS									
	A286, Discaloy, Haynes 556, Carpenter 22, Greek Ascolloy	< 40 > 40	30 - 70 27 - 55	.023 - .041 .018 - .036	.025 - .048 .020 - .043	.030 - .058 .025 - .053	.046 - .081 .036 - .071	.051 - .097 .041 - .086	.061 - .117 .051 - .107	.091 - .163 .071 - .142
	TITANIUM ALLOYS									
	Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-2SN-4Zr-2Mo-Si		75 - 135	.025 - .046	.028 - .053	.033 - .064	.051 - .091	.056 - .107	.066 - .127	.102 - .183
	5553 / Beta Titanium		55 - 105	.025 - .041	.028 - .048	.033 - .058	.051 - .081	.056 - .097	.066 - .117	.102 - .163
M	**STAINLESS STEELS**									
	13/8, 15/5, 17-4, pH Types	< 40 > 40	90 - 135 65 - 100	.023 - .041 .018 - .036	.025 - .048 .020 - .043	.030 - .058 .025 - .053	.046 - .081 .036 - .071	.051 - .097 .041 - .086	.061 - .117 .051 - .107	.091 - .163 .071 - .142
	300 Series, 304L, Nitronic 50, Duplex, Super-Austenitic	< 40 > 40	90 - 145 65 - 100	.023 - .041 .018 - .036	.025 - .048 .020 - .043	.030 - .058 .025 - .053	.046 - .081 .036 - .071	.051 - .097 .041 - .086	.061 - .117 .051 - .107	.091 - .163 .071 - .142
	400 Series - 403, 405, 420, 455	< 40 > 40	85 - 155 65 - 120	.023 - .043 .018 - .038	.025 - .051 .020 - .046	.030 - .061 .025 - .056	.046 - .086 .036 - .076	.051 - .102 .041 - .091	.061 - .122 .051 - .112	.091 - .173 .071 - .152
P	**HIGH STRENGTH TOOL STEELS**									
	A2, D2, P20, H13, S7, O1	< 40 > 40	85 - 145 55 - 120	.023 - .043 .018 - .036	.025 - .051 .020 - .043	.030 - .061 .025 - .053	.046 - .086 .036 - .071	.051 - .102 .041 - .086	.061 - .122 .051 - .107	.091 - .173 .071 - .142
	MEDIUM ALLOY TOOL STEELS									
	4140, 4340, 52100, 6150, 8620	< 40 > 40	130 - 180 90 - 135	.023 - .046 .018 - .038	.025 - .053 .020 - .046	.030 - .064 .025 - .056	.046 - .091 .036 - .076	.051 - .107 .041 - .091	.061 - .127 .051 - .112	.091 - .183 .071 - .152
	CARBON STEELS									
	1000's - 1018, 1020, 12L14	< 40	135 - 220	.028 - .048	.030 - .056	.036 - .066	.056 - .097	.061 - .112	.071 - .132	.112 - .193
K	**CAST MATERIAL**									
	Ductile Iron		130 - 190	.028 - .048	.030 - .056	.036 - .066	.056 - .097	.061 - .112	.071 - .132	.112 - .193
	Gray Iron		170 - 215	.030 - .053	.033 - .061	.038 - .071	.061 - .107	.066 - .122	.076 - .142	.122 - .213

	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.