GARR TOOL High Performance Drilling Guide for Mini Drills

ISO Material		HRC	SFM (Vc)	CHIPLOAD PER TOOTH (Fz)		
				.0312" - .0390"	.0394" - .0787"	.0791" - .1250"
S	**COBALT BASE ALLOYS**					
	Powdered Metal, Stellite, Hs-21, Haynes 25/188, X-40, L-605	< 40 > 40	100 - 150 80 - 110	.0002" - .0004" .0002" - .0004"	.0004" - .0008" .0003" - .0006"	.0006" - .0012" .0005" - .0010"
	NICKEL BASE ALLOYS					
	Invar, Kovar, Inconel-625/718, Waspaloy, Rene, Hastelloy, A286	< 40 > 40	125 - 150 100 - 125	.0003" - .0005" .0002" - .0004"	.0004" - .0008" .0003" - .0006"	.0006" - .0012" .0005" - .0010"
	IRON BASE ALLOYS					
	Incoloy 800-802, Multimet N-155, Timkin 16-25-6, Carpenter 22-b3	< 40 > 40	125 - 175 80 - 100	.0004" - .0008" .0003" - .0006"	.0006" - .0012" .0004" - .0008"	.0008" - .0015" .0006" - .0012"
	MONEL					
	Monel - 65% Nickel		75 - 125	.0002" - .0004"	.0003" - .0006"	.0005" - .0010"
	TITANIUM ALLOYS					
	Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si		150 - 200	.0003" - .0006"	.0004" - .0008"	.0006" - .0012"
M	**STAINLESS STEELS**					
	(Precipitation) 13/8, 15/5, 17-4, pH Types	< 40 > 40	125 - 175 80 - 125	.0003" - .0005" .0002" - .0004"	.0004" - .0008" .0003" - .0006"	.0006" - .0012" .0005" - .0010"
	(Austentic) 200 Series, 300 Series	< 40 > 40	100 - 175 80 - 125	.0003" - .0005" .0002" - .0004"	.0004" - .0008" .0003" - .0006"	.0006" - .0012" .0005" - .0010"
	(Austentic) 304L, 316L, Nitronic 50	< 40 > 40	80 - 100 60 - 90	.0003" - .0005" .0002" - .0004"	.0004" - .0008" .0003" - .0006"	.0006" - .0012" .0005" - .0010"
	(Martensitic) 400 Series	< 40 > 40	100 - 150 80 - 125	.0003" - .0005" .0002" - .0004"	.0004" - .0008" .0003" - .0006"	.0006" - .0012" .0005" - .0010"
P	**HIGH STRENGTH TOOL STEELS**					
	4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, O1	< 40 > 40	100 - 175 60 - 80	.0003" - .0006" .0002" - .0004"	.0004" - .0008" .0003" - .0006"	.0006" - .0012" .0005" - .0010"
	MEDIUM ALLOY TOOL STEELS					
	200, 250, 300, 8620	< 40 > 40	125 - 175 80 - 125	.0004" - .0008" .0003" - .0005"	.0006" - .0012" .0004" - .0008"	.0008" - .0015" .0006" - .0012"
	LOW CARBON STEELS					
	Platinum, A36, 12L14, 1000's, 1100's, 1300's	< 40 > 40	125 - 175 80 - 125	.0004" - .0008" .0003" - .0005"	.0006" - .0012" .0004" - .0008"	.0008" - .0015" .0006" - .0012"
	CAST STEELS					
	Steel		100 - 175	.0003" - .0006"	.0004" - .0008"	.0006" - .0012"
K	**CAST MATERIAL**					
	Ductile Iron		100 - 200	.0004" - .0008"	.0006" - .0012"	.0008" - .0015"
	Gray Iron		80 - 175	.0004" - .0008"	.0006" - .0012"	.0008" - .0015"
N	**NON-FERROUS**					
	Aluminum 2014, 2024, 6061-(T1-T6), 7075, Extruded		125 - 300	.0004" - .0008"	.0006" - .0012"	.0008" - .0015"
	Magnesium		125 - 250	.0004" - .0008"	.0006" - .0012"	.0008" - .0015"
	Copper		125 - 250	.0004" - .0008"	.0006" - .0012"	.0008" - .0015"
	Brass		100 - 250	.0003" - .0008"	.0004" - .0012"	.0006" - .0015"
	Bronze		80 - 250	.0003" - .0008"	.0004" - .0012"	.0006" - .0015"

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