GARR TOOL General Purpose Drilling Guide (Bright Finish)

	ISO Material	HRC	SFM (by Series)			
			1100	1200, 1205, 1520	1500, 1510	1600
S	**COBALT BASE ALLOYS**					
	Haynes 25/188, Stellite 21, Cobalt Chrome	< 40 > 40	- -	100 90	100 90	90 80
	NICKEL BASE ALLOYS					
	Inconel-625/718, Waspaloy, Invar, Rene, Hastelloy, Monel	< 40 > 40	- -	100 90	100 90	90 80
	IRON BASE ALLOYS					
	A286, Discaloy, Haynes 556, Carpenter 22, Greek Ascolloy	< 40 > 40	- -	100 90	100 90	90 80
	TITANIUM ALLOYS					
	Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si		-	120	120	110
	5553 / Beta Titanium		-	110	110	100
M	**STAINLESS STEELS**					
	13/8, 15/5, 17-4, pH Types	< 40 > 40	- -	130 120	130 120	120 110
	300 Series, 304L, Nitronic 50, Duplex, Super-Austenitic	< 40 > 40	- -	130 120	130 120	120 110
	400 Series - 403, 405, 420, 455	< 40 > 40	- -	130 120	130 120	120 110
P	**HIGH STRENGTH TOOL STEELS**					
	A2, D2, P20, H13, S7, O1	< 40 > 40	- -	180 170	180 170	170 160
	Thompson Shaft, Armor Plate (Class 1)	> 50	-	120	120	110
	MEDIUM ALLOY TOOL STEELS					
	4140, 4340, 52100, 6150, 8620	< 40 > 40	- -	235 225	235 225	225 215
	CARBON STEELS					
	1000's - 1018, 1020, 12L14	< 40	-	270	270	260
K	**CAST MATERIAL**					
	Ductile Iron		220	280	280	270
	Gray Iron		240	250	250	240
N	**NON-FERROUS**					
	Aluminum (6061, 7075)		-	250	-	300
	Magnesium		-	150	-	150
	Copper		-	120	-	120
	Brass, Bronze		-	160	-	130
O	**COMPOSITE (non-ISO)**					
	Glass Epoxy, Fiberglass, Plastics, Graphite, G10		140	-	140	-

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

GARR TOOL General Purpose Drilling Guide (Bright Finish)

ISO Material		HRC	CHIPLOAD PER TOOTH (Fz)				
			1/16" - 1/8"	1/8" - 1/4"	1/4" - 3/8"	3/8" - 1/2"	1/2" - 5/8"
S	**COBALT BASE ALLOYS**						
	Haynes 25/188, Stellite 21, Cobalt Chrome	< 40 > 40	.0003" - .0008" .0002" - .0006"	.0006" - .0011" .0004" - .0009"	.0010" - .0017" .0008" - .0015"	.0014" - .0024" .0012" - .0022"	.0019" - .0032" .0017" - .0030"
	NICKEL BASE ALLOYS						
	Inconel-625/718, Waspaloy, Invar, Rene, Hastelloy, Monel	< 40 > 40	.0003" - .0008" .0002" - .0006"	.0006" - .0011" .0004" - .0009"	.0010" - .0017" .0008" - .0015"	.0014" - .0024" .0012" - .0022"	.0019" - .0032" .0017" - .0030"
	IRON BASE ALLOYS						
	A286, Discaloy, Haynes 556, Carpenter 22, Greek Ascolloy	< 40 > 40	.0003" - .0008" .0002" - .0006"	.0006" - .0011" .0004" - .0009"	.0010" - .0017" .0008" - .0015"	.0014" - .0024" .0012" - .0022"	.0019" - .0032" .0017" - .0030"
	TITANIUM ALLOYS						
	Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si		.0004" - .0009"	.0008" - .0014"	.0012" - .0020"	.0016" - .0027"	.0021" - .0033"
	5553 / Beta Titanium		.0003" - .0007"	.0006" - .0011"	.0010" - .0017"	.0014" - .0024"	.0019" - .0030"
M	**STAINLESS STEELS**						
	13/8, 15/5, 17-4, pH Types	< 40 > 40	.0004" - .0009" .0003" - .0007"	.0007" - .0013" .0006" - .0011"	.0011" - .0019" .0010" - .0017"	.0015" - .0026" .0014" - .0024"	.0020" - .0032" .0019" - .0030"
	300 Series, 304L, Nitronic 50, Duplex, Super-Austenitic	< 40 > 40	.0004" - .0009" .0003" - .0007"	.0007" - .0013" .0006" - .0011"	.0011" - .0019" .0010" - .0017"	.0015" - .0026" .0014" - .0024"	.0020" - .0032" .0019" - .0030"
	400 Series - 403, 405, 420, 455	< 40 > 40	.0004" - .0009" .0003" - .0007"	.0007" - .0013" .0006" - .0011"	.0011" - .0019" .0010" - .0017"	.0015" - .0026" .0014" - .0024"	.0020" - .0032" .0019" - .0030"
P	**HIGH STRENGTH TOOL STEELS**						
	A2, D2, P20, H13, S7, O1	< 40 > 40	.0004" - .0009" .0003" - .0007"	.0007" - .0013" .0006" - .0011"	.0011" - .0019" .0010" - .0017"	.0015" - .0026" .0014" - .0024"	.0020" - .0032" .0019" - .0030"
	Thompson Shaft, Armor Plate (Class 1)	> 50	.0002" - .0006"	.0005" - .0009"	.0009" - .0015"	.0013" - .0022"	.0018" - .0028"
	MEDIUM ALLOY TOOL STEELS						
	4140, 4340, 52100, 6150, 8620	< 40 > 40	.0004" - .0009" .0003" - .0007"	.0007" - .0013" .0006" - .0011"	.0011" - .0019" .0010" - .0017"	.0015" - .0026" .0014" - .0024"	.0020" - .0032" .0019" - .0030"
	CARBON STEELS						
	1000's - 1018, 1020, 12L14	< 40	.0005" - .0010"	.0008" - .0014"	.0012" - .0020"	.0016" - .0027"	.0021" - .0033"
K	**CAST MATERIAL**						
	Ductile Iron		.0005" - .0010"	.0008" - .0014"	.0012" - .0020"	.0016" - .0027"	.0021" - .0033"
	Gray Iron		.0005" - .0010"	.0008" - .0014"	.0012" - .0020"	.0016" - .0027"	.0021" - .0033"
N	**NON-FERROUS**						
	Aluminum (6061, 7075)		.0006" - .0011"	.0009" - .0015"	.0013" - .0021"	.0017" - .0028"	.0022" - .0034"
	Magnesium		.0005" - .0010"	.0009" - .0014"	.0013" - .0020"	.0017" - .0027"	.0022" - .0033"
	Copper		.0004" - .0008"	.0008" - .0012"	.0012" - .0018"	.0016" - .0025"	.0021" - .0031"
	Brass, Bronze		.0005" - .0009"	.0009" - .0013"	.0013" - .0019"	.0017" - .0026"	.0022" - .0032"
O	**COMPOSITE (non-ISO)**						
	Glass Epoxy, Fiberglass, Plastics, Graphite, G10		.0003" - .0008"	.0007" - .0012"	.0011" - .0018"	.0015" - .0025"	.0020" - .0031"

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

GARR TOOL General Purpose Drilling Guide (Durana Coated)

ISO Material		HRC	SFM (by Series)			
			1100H, 1120H	1200H, 1205H, 1520H	1500H, 1510H	1800H
S	**COBALT BASE ALLOYS**					
	Haynes 25/188, Stellite 21, Cobalt Chrome	< 40 > 40	- -	120 105	120 105	- -
	NICKEL BASE ALLOYS					
	Inconel-625/718, Waspaloy, Invar, Rene, Hastelloy, Monel	< 40 > 40	- -	120 105	120 105	- -
	IRON BASE ALLOYS					
	A286, Discaloy, Haynes 556, Carpenter 22, Greek Ascolloy	< 40 > 40	- -	120 105	120 105	- -
	TITANIUM ALLOYS					
	Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si		-	140	140	-
	5553 / Beta Titanium		-	130	130	-
M	**STAINLESS STEELS**					
	13/8, 15/5, 17-4, pH Types	< 40 > 40	- -	145 135	145 135	- -
	300 Series, 304L, Nitronic 50, Duplex, Super-Austenitic	< 40 > 40	- -	145 135	145 135	- -
	400 Series - 403, 405, 420, 455	< 40 > 40	- -	145 135	145 135	- -
P	**HIGH STRENGTH TOOL STEELS**					
	A2, D2, P20, H13, S7, O1	< 40 > 40	- -	200 190	200 190	- -
	Thompson Shaft, Armor Plate (Class 1)	> 50	-	-	140	-
	MEDIUM ALLOY TOOL STEELS					
	4140, 4340, 52100, 6150, 8620	< 40 > 40	- -	255 245	255 245	- -
	CARBON STEELS					
	1000's - 1018, 1020, 12L14	< 40	-	290	290	-
K	**CAST MATERIAL**					
	Ductile Iron		300	300	300	-
	Gray Iron		270	270	270	-
N	**NON-FERROUS**					
	Aluminum (6061, 7075)		-	300	-	280
	Magnesium		-	180	-	220
	Copper		-	170	-	180
	Brass, Bronze		-	180	-	260
O	**COMPOSITE (non-ISO)**					
	Glass Epoxy, Fiberglass, Plastics, Graphite, G10		160	160	160	-

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

GARR TOOL General Purpose Drilling Guide (Durana Coated)

ISO Material		HRC	CHIPLOAD PER TOOTH (Fz)				
			1/16" - 1/8"	1/8" - 1/4"	1/4" - 3/8"	3/8" - 1/2"	1/2" - 5/8"
S	**COBALT BASE ALLOYS**						
	Haynes 25/188, Stellite 21, Cobalt Chrome	< 40 > 40	.0003" - .0008" .0002" - .0006"	.0006" - .0011" .0004" - .0009"	.0010" - .0017" .0008" - .0015"	.0014" - .0024" .0012" - .0022"	.0019" - .0032" .0017" - .0030"
	NICKEL BASE ALLOYS						
	Inconel-625/718, Waspaloy, Invar, Rene, Hastelloy, Monel	< 40 > 40	.0003" - .0008" .0002" - .0006"	.0006" - .0011" .0004" - .0009"	.0010" - .0017" .0008" - .0015"	.0014" - .0024" .0012" - .0022"	.0019" - .0032" .0017" - .0030"
	IRON BASE ALLOYS						
	A286, Discaloy, Haynes 556, Carpenter 22, Greek Ascolloy	< 40 > 40	.0003" - .0008" .0002" - .0006"	.0006" - .0011" .0004" - .0009"	.0010" - .0017" .0008" - .0015"	.0014" - .0024" .0012" - .0022"	.0019" - .0032" .0017" - .0030"
	TITANIUM ALLOYS						
	Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si		.0004" - .0009"	.0008" - .0014"	.0012" - .0020"	.0016" - .0027"	.0021" - .0033"
	5553 / Beta Titanium		.0003" - .0007"	.0006" - .0011"	.0010" - .0017"	.0014" - .0024"	.0019" - .0030"
M	**STAINLESS STEELS**						
	13/8, 15/5, 17-4, pH Types	< 40 > 40	.0004" - .0009" .0003" - .0007"	.0007" - .0013" .0006" - .0011"	.0011" - .0019" .0010" - .0017"	.0015" - .0026" .0014" - .0024"	.0020" - .0032" .0019" - .0030"
	300 Series, 304L, Nitronic 50, Duplex, Super-Austenitic	< 40 > 40	.0004" - .0009" .0003" - .0007"	.0007" - .0013" .0006" - .0011"	.0011" - .0019" .0010" - .0017"	.0015" - .0026" .0014" - .0024"	.0020" - .0032" .0019" - .0030"
	400 Series - 403, 405, 420, 455	< 40 > 40	.0004" - .0009" .0003" - .0007"	.0007" - .0013" .0006" - .0011"	.0011" - .0019" .0010" - .0017"	.0015" - .0026" .0014" - .0024"	.0020" - .0032" .0019" - .0030"
P	**HIGH STRENGTH TOOL STEELS**						
	A2, D2, P20, H13, S7, O1	< 40 > 40	.0004" - .0009" .0003" - .0007"	.0007" - .0013" .0006" - .0011"	.0011" - .0019" .0010" - .0017"	.0015" - .0026" .0014" - .0024"	.0020" - .0032" .0019" - .0030"
	Thompson Shaft, Armor Plate (Class 1)	> 50	.0002" - .0006"	.0005" - .0009"	.0009" - .0015"	.0013" - .0022"	.0018" - .0028"
	MEDIUM ALLOY TOOL STEELS						
	4140, 4340, 52100, 6150, 8620	< 40 > 40	.0004" - .0009" .0003" - .0007"	.0007" - .0013" .0006" - .0011"	.0011" - .0019" .0010" - .0017"	.0015" - .0026" .0014" - .0024"	.0020" - .0032" .0019" - .0030"
	CARBON STEELS						
	1000's - 1018, 1020, 12L14	< 40	.0005" - .0010"	.0008" - .0014"	.0012" - .0020"	.0016" - .0027"	.0021" - .0033"
K	**CAST MATERIAL**						
	Ductile Iron		.0005" - .0010"	.0008" - .0014"	.0012" - .0020"	.0016" - .0027"	.0021" - .0033"
	Gray Iron		.0005" - .0010"	.0008" - .0014"	.0012" - .0020"	.0016" - .0027"	.0021" - .0033"
N	**NON-FERROUS**						
	Aluminum (6061, 7075)		.0006" - .0011"	.0009" - .0015"	.0013" - .0021"	.0017" - .0028"	.0022" - .0034"
	Magnesium		.0005" - .0010"	.0009" - .0014"	.0013" - .0020"	.0017" - .0027"	.0022" - .0033"
	Copper		.0004" - .0008"	.0008" - .0012"	.0012" - .0018"	.0016" - .0025"	.0021" - .0031"
	Brass, Bronze		.0005" - .0009"	.0009" - .0013"	.0013" - .0019"	.0017" - .0026"	.0022" - .0032"
O	**COMPOSITE (non-ISO)**						
	Glass Epoxy, Fiberglass, Plastics, Graphite, G10		.0003" - .0008"	.0007" - .0012"	.0011" - .0018"	.0015" - .0025"	.0020" - .0031"

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