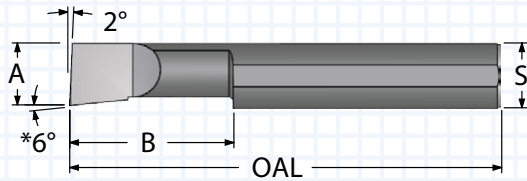


# BORING BARS - SOLID CARBIDE



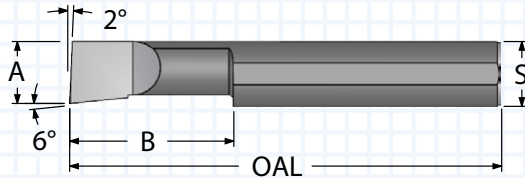
- Made with premium submicron grade carbide
- ALTiN+ coating for higher Surface Feet per Minute
- Precision ground flat for guaranteed tool orientation

"A" MIN BORE	"B" MAX DEPTH	"S" SHANK DIA.	OAL	ORDER #		EDP #	
				UNCOATED	AlTiN+	UNCOATED	AlTiN+
0.050	0.150	0.125	1.50	B050150	B050150A	211401	212955
0.050	0.200	0.125	1.50	B050200	B050200A	211404	212958
0.050	0.300	0.125	1.50	B050300	B050300A	211407	212961
0.050	0.400	0.125	1.50	B050400	B050400A	211410	212964
0.060	0.150	0.125	1.50	B060150	B060150A	211413	212967
0.060	0.200	0.125	1.50	B060200	B060200A	211416	212970
0.060	0.300	0.125	1.50	B060300	B060300A	211419	212973
0.060	0.400	0.125	1.50	B060400	B060400A	211422	212976
0.060	0.500	0.125	1.50	B060500	B060500A	211425	212979
0.080	0.150	0.125	1.50	B080150	B080150A	211428	212982
0.080	0.200	0.125	1.50	B080200	B080200A	211431	212985
0.080	0.300	0.125	1.50	B080300	B080300A	211434	212988
0.080	0.400	0.125	1.50	B080400	B080400A	211437	212991
0.080	0.500	0.125	1.50	B080500	B080500A	211440	212994
0.080	0.600	0.125	1.50	B080600	B080600A	211443	212997
0.100	0.150	0.125	1.50	B100150	B100150A	211446	213000
0.100	0.200	0.125	1.50	B100200	B100200A	211449	213003
0.100	0.300	0.125	1.50	B100300	B100300A	211452	213006
0.100	0.400	0.125	1.50	B100400	B100400A	211455	213009
0.100	0.500	0.125	1.50	B100500	B100500A	211458	213012
0.100	0.600	0.125	1.50	B100600	B100600A	211461	213015
0.100	0.700	0.125	1.50	B100700	B100700A	211464	213018
0.110	0.150	0.125	1.50	B110150	B110150A	211467	213021
0.110	0.200	0.125	1.50	B110200	B110200A	211470	213024
0.110	0.300	0.125	1.50	B110300	B110300A	211473	213027
0.110	0.400	0.125	1.50	B110400	B110400A	211476	213030
0.110	0.500	0.125	1.50	B110500	B110500A	211479	213033
0.110	0.600	0.125	1.50	B110600	B110600A	211482	213036
0.110	0.700	0.125	1.50	B110700	B110700A	211485	213039
0.120	0.250	0.1875	2.00	B120250	B120250A	211488	213042
0.120	0.350	0.1875	2.00	B120350	B120350A	211491	213045
0.120	0.500	0.1875	2.00	B120500	B120500A	211494	213048
0.120	0.600	0.1875	2.00	B120600	B120600A	211497	213051
0.120	0.700	0.1875	2.00	B120700	B120700A	211500	213054
0.120	0.800	0.1875	2.00	B120800	B120800A	211503	213057

"A" MIN BORE	"B" MAX DEPTH	"S" SHANK DIA.	OAL	ORDER #		EDP #	
				UNCOATED	AlTiN+	UNCOATED	AlTiN+
0.140	0.250	0.1875	2.00	B140250	B140250A	211506	213060
0.140	0.400	0.1875	2.00	B140400	B140400A	211509	213063
0.140	0.500	0.1875	2.00	B140500	B140500A	211512	213066
0.140	0.600	0.1875	2.00	B140600	B140600A	211515	213069
0.140	0.700	0.1875	2.00	B140700	B140700A	211518	213072
0.140	0.750	0.1875	2.00	B140750	B140750A	211521	213075
0.140	0.800	0.1875	2.00	B140800	B140800A	211524	213078
0.160	0.250	0.1875	2.00	B160250	B160250A	211530	213084
0.160	0.400	0.1875	2.00	B160400	B160400A	211533	213087
0.160	0.500	0.1875	2.00	B160500	B160500A	211536	213090
0.160	0.600	0.1875	2.00	B160600	B160600A	211539	213093
0.160	0.750	0.1875	2.00	B160750	B160750A	211542	213096
0.160	0.900	0.1875	2.00	B160900	B160900A	211545	213099
0.160	1.000	0.1875	2.00	B1601000	B1601000A	211527	213081
0.180	0.350	0.250	2.50	B180350	B180350A	211560	213114
0.180	0.500	0.250	2.50	B180500	B180500A	211563	213117
0.180	0.600	0.250	2.50	B180600	B180600A	211566	213120
0.180	0.750	0.250	2.50	B180750	B180750A	211569	213123
0.180	0.900	0.250	2.50	B180900	B180900A	211572	213126
0.180	1.000	0.250	2.50	B1801000	B1801000A	211548	213102
0.180	1.100	0.250	2.50	B1801100	B1801100A	211551	213105
0.180	1.250	0.250	2.50	B1801250	B1801250A	211554	213108
0.180	1.500	0.250	2.50	B1801500	B1801500A	211557	213111
0.200	0.400	0.250	2.50	B200400	B200400A	211587	213141
0.200	0.500	0.250	2.50	B200500	B200500A	211590	213144
0.200	0.600	0.250	2.50	B200600	B200600A	211593	213147
0.200	0.700	0.250	2.50	B200700	B200700A	211596	213150
0.200	0.800	0.250	2.50	B200800	B200800A	211599	213153
0.200	0.900	0.250	2.50	B200900	B200900A	211602	213156
0.200	1.000	0.250	2.50	B2001000	B2001000A	211575	213129
0.200	1.100	0.250	2.50	B2001100	B2001100A	211578	213132
0.200	1.200	0.250	2.50	B2001200	B2001200A	211581	213135
0.200	1.300	0.250	2.50	B2001300	B2001300A	211584	213138

\* The B050 and the B060 series have 3° side clearance.

# BORING BARS - SOLID CARBIDE



- ALTiN+ coating extends tool life
- Elliptically ground neck provides maximum strength
- Precision ground shank flat guarantees tool orientation

"A" MIN BORE	"B" MAX DEPTH	"S" SHANK DIA.	OAL	ORDER #		EDP #	
				UNCOATED	AITiN+	UNCOATED	AITiN+
0.230	0.400	0.3125	2.50	B230400	B230400A	211629	213183
0.230	0.500	0.3125	2.50	B230500	B230500A	211632	213186
0.230	0.600	0.3125	2.50	B230600	B230600A	211635	213189
0.230	0.700	0.3125	2.50	B230700	B230700A	211638	213192
0.230	0.800	0.3125	2.50	B230800	B230800A	211641	213195
0.230	0.900	0.3125	2.50	B230900	B230900A	211644	213198
0.230	1.000	0.3125	2.50	B2301000	B2301000A	211605	213159
0.230	1.100	0.3125	2.50	B2301100	B2301100A	211608	213162
0.230	1.150	0.3125	2.50	B2301150	B2301150A	211611	213165
0.230	1.200	0.3125	2.50	B2301200	B2301200A	211614	213168
0.230	1.250	0.3125	2.50	B2301250	B2301250A	211617	213171
0.230	1.400	0.3125	2.50	B2301400	B2301400A	211620	213174
0.230	1.500	0.3125	2.50	B2301500	B2301500A	211623	213177
0.230	1.600	0.3125	3.00	B2301600	B2301600A	211626	213180
0.290	0.500	0.3125	2.50	B290500	B290500A	211668	213222
0.290	0.600	0.3125	2.50	B290600	B290600A	211671	213225
0.290	0.750	0.3125	2.50	B290750	B290750A	211674	213228
0.290	0.900	0.3125	2.50	B290900	B290900A	211677	213231
0.290	1.000	0.3125	2.50	B2901000	B2901000A	211647	213201
0.290	1.100	0.3125	2.50	B2901100	B2901100A	211650	213204
0.290	1.250	0.3125	2.50	B2901250	B2901250A	211653	213207
0.290	1.350	0.3125	2.50	B2901350	B2901350A	211656	213210
0.290	1.500	0.3125	2.50	B2901500	B2901500A	211659	213213
0.290	1.600	0.3125	3.00	B2901600	B2901600A	211662	213216
0.290	1.750	0.3125	3.00	B2901750	B2901750A	211665	213219
0.320	0.500	0.375	2.50	B320500	B320500A	211707	213261
0.320	0.600	0.375	2.50	B320600	B320600A	211710	213264
0.320	0.750	0.375	2.50	B320750	B320750A	211713	213267
0.320	0.900	0.375	2.50	B320900	B320900A	211716	213270
0.320	1.000	0.375	2.50	B3201000	B3201000A	211680	213234
0.320	1.100	0.375	2.50	B3201100	B3201100A	211683	213237
0.320	1.250	0.375	2.50	B3201250	B3201250A	211686	213240
0.320	1.500	0.375	2.50	B3201500	B3201500A	211689	213243
0.320	1.600	0.375	3.00	B3201600	B3201600A	211692	213246
0.320	1.800	0.375	3.00	B3201800	B3201800A	211695	213249
0.320	2.000	0.375	4.00	B3202000	B3202000A	211698	213252
0.320	2.500	0.375	4.00	B3202500	B3202500A	211701	213255
0.320	3.000	0.375	4.00	B3203000	B3203000A	211704	213258

"A" MIN BORE	"B" MAX DEPTH	"S" SHANK DIA.	OAL	ORDER #		EDP #	
				UNCOATED	AITiN+	UNCOATED	AITiN+
0.360	0.500	0.375	2.50	B360500	B360500A	211746	213300
0.360	0.600	0.375	2.50	B360600	B360600A	211749	213303
0.360	0.750	0.375	2.50	B360750	B360750A	211752	213306
0.360	0.900	0.375	2.50	B360900	B360900A	211755	213309
0.360	1.000	0.375	2.50	B3601000	B3601000A	211719	213273
0.360	1.150	0.375	2.50	B3601150	B3601150A	211722	213276
0.360	1.250	0.375	2.50	B3601250	B3601250A	211725	213279
0.360	1.500	0.375	2.50	B3601500	B3601500A	211728	213282
0.360	1.600	0.375	3.00	B3601600	B3601600A	211731	213285
0.360	1.800	0.375	3.00	B3601800	B3601800A	211734	213288
0.360	2.000	0.375	4.00	B3602000	B3602000A	211737	213291
0.360	2.500	0.375	4.00	B3602500	B3602500A	211740	213294
0.360	3.000	0.375	4.00	B3603000	B3603000A	211743	213297
0.490	0.750	0.500	3.00	B490750	B490750A	211791	213345
0.490	1.000	0.500	3.00	B4901000	B4901000A	211758	213312
0.490	1.250	0.500	3.00	B4901250	B4901250A	211761	213315
0.490	1.500	0.500	3.00	B4901500	B4901500A	211764	213318
0.490	2.000	0.500	4.00	B4902000	B4902000A	211767	213321
0.490	2.500	0.500	4.00	B4902500	B4902500A	211770	213324
0.490	2.600	0.500	4.00	B4902600	B4902600A	211773	213327
0.490	2.750	0.500	4.00	B4902750	B4902750A	211776	213330
0.490	3.000	0.500	6.00	B4903000	B4903000A	211779	213333
0.490	3.500	0.500	6.00	B4903500	B4903500A	211782	213336
0.490	4.000	0.500	6.00	B4904000	B4904000A	211785	213339
0.490	4.500	0.500	6.00	B4904500	B4904500A	211788	213342

THREAD MILLS

SINGLE POINT TOOLS  
BORING

INDEXABLE TOOLS

PORT - CAVITY

SPECIALTY

# SOLID CARBIDE BORING BAR FEED AND SPEED CHART

MATERIAL	HB/Rc	SPEED (SFM)		FEED IPR	CUTTING CONDITIONS					
		UNCOATED	ALTiN+		TOOL DIAMETER					
					.015-.045	.050-.100	.110-.160	.180-.230	.290-.320	.360+
					MAX DOC	MAX DOC	MAX DOC	MAX DOC	MAX DOC	MAX DOC
CAST IRON	160 HB	75-200	200-550	.0005-.010	0.006	0.008	0.010	0.014	0.020	0.031
CARBON STEEL	18 Rc	75-200	200-450	.0005-.007	0.003	0.005	0.006	0.008	0.012	0.017
ALLOY STEEL	20 Rc	75-200	200-425	.0005-.007	0.003	0.004	0.005	0.007	0.010	0.015
TOOL STEEL	25 Rc	75-175	175-300	.0005-.005	0.002	0.003	0.004	0.006	0.008	0.012
300 STAINLESS STEEL	150 HB	75-175	175-350	.0005-.005	0.003	0.003	0.004	0.006	0.008	0.013
400 STAINLESS STEEL	195 HB	75-210	130-420	.0005-.005	0.002	0.003	0.004	0.006	0.008	0.012
HIGH TEMP ALLOY (Ni & Co BASE)	20 Rc	50-130	130-300	.0005-.004	0.002	0.003	0.003	0.005	0.007	0.010
TITANIUM	25 Rc	50-120	120-275	.0005-.005	0.003	0.004	0.005	0.006	0.009	0.014
HEAT TREATED ALLOYS (38-45Rc)	40 Rc	50-100	100-200	.0005-.005	0.002	0.002	0.003	0.004	0.006	0.009
ALUMINUM	100 HB	75-250	250-750	.0005-.015	0.011	0.015	0.019	0.026	0.038	0.056
BRASS, ZINC	80 HB	75-300	250-650	.001-.010	0.009	0.012	0.015	0.021	0.030	0.045

SFM = Surface Feet Per Minute    DOC = Depth of Cut    IPR = Inches Per Revolution

Starting parameters only. Length-to-diameter ratios, setup, and machine rigidity may affect performance.

$$\begin{aligned} \text{SFM} &= .262 \times \text{DIAMETER} \times \text{RPM} \\ \text{RPM} &= 3.82 \times \text{SFM} \div \text{DIAMETER} \\ \text{IPM} &= \text{FPT} \times \text{Number of Teeth} \times \text{RPM} \end{aligned}$$

$$\begin{aligned} \text{Meters/Min} &= \text{SFM} \times .3048 \\ \text{Millimeters/Rev} &= \text{IPR} \times 25.40 \end{aligned}$$

# SOLID CARBIDE BORING TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
RAPID FLANK WEAR	CUTTING CONDITIONS	Check for excessive speed and feed - See chart.
	TOOL	Select a coated tool.
	PART	Make sure prior operation did not work harden the metal.
BUILT-UP EDGE	TOOL	Select a coated tool.
	CUTTING FORCE	Check for excessive feed rate (IPR) - See chart.
	HEAT	Use the SCT coolant holder. If coolant is not available, use shop air and a coated tool.
CORNER BREAKAGE	CUTTING CONDITIONS	Check for excessive feed and speed and depth of cut - see chart.
	TOOL	Select a tool with a radius. A radius is stronger than a sharp corner.
	PART	Check the drilled hole.
SURFACE TOO ROUGH	CUTTING CONDITIONS	Check for excessive feed rate (IPR) - See chart.
	BUILT-UP EDGE	See above (Built-Up Edge).
CHATTER	SET UP	Set tool above center. Reduce the overhang ratio. Clamping length should be at least 3x the boring bar diameter. Change the speed of the machine. Speed change may break up harmonics and reduce chatter.
	BORING BAR	Select the largest diameter boring bar that will bore the required diameter.
TAPER SMALLER IN BACK	CHIP PACKING	If the boring bar is too large to allow chips to evacuate, then the chips may pack on the tool and cause the bar to deflect away from the bore.
	PROGRAM	If the taper is consistent, then the program can be altered to bore a taper in opposite direction resulting in a straight hole.
TAPER BIGGER IN BACK	CUTTING FORCES	Reduce forces. Deflecting bar below center causes hole to become larger.
	BUILT-UP EDGE	Built-up edge will cause the hole to become larger until the built edge breaks off, then the hole becomes smaller.
	PROGRAM	If taper is consistent, then the program can be altered to bore a taper in the opposite direction resulting in a straight hole.

# GROOVING TOOL FEED AND SPEED CHART

MATERIAL	HB/Rc	SPEED (SFM)		CUTTING CONDITIONS				
				TOOL DIAMETER				
		UNCOATED	ALTiN+	.060 -0.080	.090 -.120	.187	.250-.312	.375+
				MAX FPR	MAX FPR	MAX FPR	MAX FPR	MAX FPR
CAST IRON	160 HB	75-200	200-550	0.0010	0.0012	0.0017	0.0031	0.0044
CARBON STEEL	18 Rc	75-200	200-450	0.0007	0.0008	0.0011	0.0022	0.0030
ALLOY STEEL	20 Rc	75-200	200-425	0.0006	0.0007	0.0010	0.0019	0.0026
TOOL STEEL	25 Rc	75-175	175-300	0.0005	0.0006	0.0008	0.0015	0.0022
300 STAINLESS STEEL	150 HB	75-175	75-350	0.0006	0.0007	0.0010	0.0019	0.0026
400 STAINLESS STEEL	195 HB	75-210	130-420	0.0005	0.0006	0.0008	0.0016	0.0023
HIGH TEMP ALLOY (NICKEL & COBALT BASE)	20 Rc	50-130	130-300	0.0004	0.0005	0.0007	0.0013	0.0017
TITANIUM	25 Rc	50-120	120-275	0.0005	0.0006	0.0008	0.0016	0.0022
HEAT TREATED ALLOYS (38-45Rc)	40 Rc	50-100	100-200	0.0004	0.0004	0.0006	0.0011	0.0016
ALUMINUM	100 HB	75-250	250-750	0.0022	0.0026	0.0037	0.0065	0.0085
BRASS, ZINC	80 HB	250-300	250-650	0.0018	0.0021	0.0030	0.0053	0.0079

SFM = Surface Feet Per Minute

FPR = Feed Per Revolution

Starting parameters only. Length-to-diameter ratios, setup, and machine rigidity may affect performance.

## GROOVING TOOL TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
RAPID FLANK WEAR	CUTTING CONDITIONS	Check for excessive speed - see chart.
	TOOL	Select a coated tool.
	PART	Make sure prior operation did not work harden the material.
BUILT-UP EDGE	TOOL	Select a coated tool.
	CUTTING FORCE	Check for excessive speed rate (IPR) - see chart.
	HEAT	Use the SCT coolant holder. If coolant is not available, use shop air and a coated tool.
CHATTER	CUTTING CONDITIONS	Reduce RPM and increase feed rate within the feed and speed chart parameters.
	CLAMPING	Clamping length should be a minimum of 3x the shank diameter in the tool holder. Check tool holding rigidity.
	TOOL	Hone cutting edge. A light hone (0.0001-0.0003 inch) will help keep force constant.
TOOL BREAKAGE	CUTTING CONDITIONS	Check for excessive feed rate (IPR) - see chart.
	CHIP PACKING	Stagger - Peck grooving.

# SINGLE POINT THREADING TECHNICAL CHART

MATERIAL	HB/Rc	SPEED (SFM)		FIRST PASS DEPTH					
		UNCOATED	ALTiN+	TOOL DIAMETER					
				.040-.050	.060-.092	.120-.152	.180-.232	.290-.362	.373+
CAST IRON	160 HB	75-200	200-550	0.003	0.004	0.005	0.007	0.008	0.009
CARBON STEEL	18 Rc	75-200	200-450	0.003	0.005	0.006	0.007	0.008	0.009
ALLOY STEEL	20 Rc	75-200	200-425	0.003	0.004	0.005	0.006	0.007	0.008
TOOL STEEL	25 Rc	75-175	175-300	0.002	0.003	0.004	0.005	0.006	0.007
300 STAINLESS STEEL	150 HB	75-175	175-350	0.003	0.003	0.004	0.005	0.006	0.007
400 STAINLESS STEEL	195 HB	75-210	130-420	0.003	0.004	0.005	0.006	0.006	0.007
HIGH TEMP ALLOY (NICKEL & COBALT BASE)	20 Rc	50-130	130-300	0.002	0.003	0.003	0.004	0.005	0.005
TITANIUM	25 Rc	50-100	120-275	0.003	0.003	0.004	0.005	0.006	0.007
HEAT TREATED ALLOYS (38-45Rc)	40 Rc	50-100	100-200	0.002	0.002	0.003	0.004	0.004	0.005
ALUMINUM	100 HB	75-250	200-750	0.004	0.005	0.007	0.008	0.010	0.011
BRASS, ZINC	80 HB	75-300	250-650	0.003	0.005	0.006	0.007	0.008	0.009

Parameters are a starting point based on machinability rating at hardness listed.  
Check machinability rating of the material to be machined and adjust First Pass Depth.

## Helpful Formulas and Information

$$\text{PITCH} = \frac{1}{\text{TPI}}$$

TPI = Threads Per Inch

ACME Thread Depth = Pitch × 0.5

Stub ACME Thread Depth = Pitch × 0.3

NPT Pipe Thread Depth = Pitch × 0.76

Internal 60° Thread Depth = Pitch × 0.54

Feed Rate = Pitch × Number of Thread Starts

Minimum Depth per Pass should not be less than 0.0003

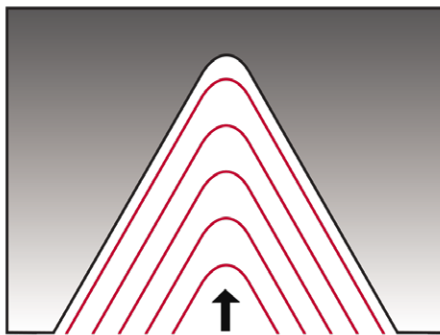
Threads not ending in a relief need at least one thread pitch length of pullout

Make sure feed rate calculation does not exceed the maximum feed rate of the machine

# SINGLE POINT THREADING TROUBLESHOOTING

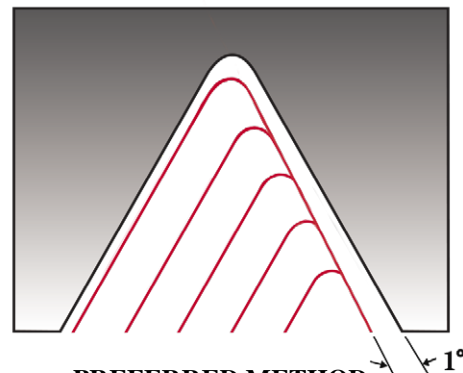
PROBLEM	CAUSE	SOLUTION
RAPID FLANK WEAR	CUTTING CONDITIONS	Check for excessive speed - see chart.
	PART	Make sure prior operation did not work harden the material.
	TOOL	Select a coated tool.
BUILT-UP EDGE	TOOL	Select a coated tool.
	CUTTING FORCE	Increase the number of passes.
	HEAT	Use the SCT coolant holder. If coolant is not available, use shop air and a coated tool.
CORNER BREAKAGE	CUTTING CONDITIONS	Reduce the depth-of-cut on the first pass.
	PROGRAM	If there is no thread relief, withdraw the tool on an angle.
	PART	End in thread relief.
CHIPS WRAPPING AROUND TOOL	TOOL	Use a tool that is at least 30% smaller than the hole diameter.

## RADIAL INFEEED



NOT RECOMMENDED

## MODIFIED FLANK



PREFERRED METHOD

Radial Infeed is not recommended. Modified flank at 1° is recommended.

For unfavorable length-to-diameter ratios or difficult-to-machine materials, the number of passes will need to be increased up to 40% more.

Depth of cut per pass should not be less than 0.0003 inch.



# SINGLE POINT CBN & PCD TECHNICAL & APPLICATION

## PCD TIPPED TOOL INFORMATION

SCT PCD tools and inserts are excellent for continuous cutting of a wide range of non-ferrous and non-metal materials. The products are precision ground for machining to sub-micron finishes with maximum tool life. PCD allows for higher cutting speeds with longer tool life.

SINGLE POINT TOOLS  
TECH INFO

MATERIAL	BHN/Rc	SPEED RANGE (SFM)	FEED IPR	SINGLE POINT PCD TIPPED BARS			
				TOOL DIAMETER			
				.120-160 MAX DOC	.180-.230 MAX DOC	.290-.320 MAX DOC	.360+ MAX DOC
LOW SILICON ALUMINUM	225-350 BHN	1000-5000	.001-.007	0.015	0.021	0.03	0.045
HIGH SILICON ALUMINUM	270-425 BHN	600-3000	.001-.007	0.015	0.021	0.03	0.045
METAL MATRIX COMPOSITIES	N/A	500-2000	.001-.007	0.008	0.012	0.02	0.03
COPPER ALLOYS, BRASS, BRONZE	80-120 BHN	750-3500	.001-.007	0.015	0.021	0.03	0.045
PRESINTERED TUNGSTEN CARBIDE	140-300 BHN	100-350	.001-.005	0.003	0.005	0.007	0.012
ACRYLICS	N/A	700-1500	.001-.007	0.015	0.021	0.03	0.045
FIBERGLASS	N/A	600-1000	.001-.007	0.012	0.02	0.03	0.045
GRAPHITES	N/A	600-1000	.001-.007	0.015	0.021	0.03	0.045
NYLON, PLASTIC	N/A	700-1500	.001-.007	0.015	0.021	0.03	0.045
HARD RUBBER	N/A	500-2500	.001-.007	0.015	0.021	0.03	0.045

APPLICATION GUIDELINES
Make sure the machine and setup is rigid and solid. Chatter will cause chipping.
Tool height when boring should be slightly above center. Tool deflection will put the tool on center.
Do not stop the machine with the tool in cut. This will result in tool breakage.
Use of coolant will reduce heat and improve surface finish.
Do not contact the tool to a hard surface prior to the machining process- this will cause chipping.
Higher speeds minimize tool buildup.
Depth of cut should not exceed 70% of PCD tip length.

As the DOC decreases the feed rate can increase DOC = Depth of Cut SFM = Surface Feet per Minute

## CBN TIPPED TOOL INFORMATION

SCT CBN tools and inserts are excellent for continuous cutting of a wide range of hardened steels, powdered metals, cast irons and super alloys. The products are precision ground with hones for machining to sub-micron finishes with maximum tool life. CBN tipped tools and inserts can take the place of grinding.

MATERIAL	BHN/Rc	SPEED RANGE (SFM)	FEED IPR	SINGLE POINT CBN TIPPED BARS			
				TOOL DIAMETER			
				.120-160 MAX DOC	.180-.230 MAX DOC	.290-.320 MAX DOC	.360+ MAX DOC
HEAT TREATED ALLOY	45-60Rc	200-600	.001-.005	0.003	0.004	0.006	0.009
TOOL STEEL	45-60Rc	200-600	.001-.005	0.003	0.004	0.006	0.009
NODULAR IRON	N/A	600-1500	.001-.005	0.006	0.01	0.02	0.03
PEARLITIC IRON	220-240BHN	600-2500	.001-.007	0.006	0.01	0.02	0.03
WHITE/CHILLED IRON	54-60Rc	200-500	.001-.005	0.005	0.008	0.012	0.015
SUPER ALLOY Ni BASE	240-475 BHN	200-800	.001-.005	0.003	0.004	0.006	0.025
COBOLT BASED ALLOY, STELLITE	45-55Rc	200-500	.001-.005	0.003	0.004	0.006	0.009
INCONELS	45-55Rc	200-500	.001-.005	0.003	0.004	0.006	0.009

APPLICATION GUIDELINES
Make sure the machine and setup is rigid and solid. Chatter will cause chipping
Tool height when boring should be slightly above center. Tool deflection will put the tool on center.
Do not stop the machine with the tool in cut. This will result in tool breakage.
Coolant use is not advised as it could cause thermal cracking.
Do not contact the tool to a hard surface prior to the machining process. This will cause chipping.
Depth of cut should not exceed 30% of CBN tip length.

As the DOC decreases the feed rate can increase DOC = Depth of Cut SFM = Surface Feet per Minute