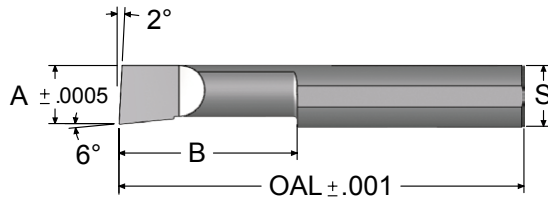


QUALIFIED BORING BARS - SOLID CARBIDE



- Qualified length provides quicker tool changes
- Overall length is qualified to ± 0.001
- Minimum bore diameter is qualified to ± 0.0005
- Precision ground flat for guaranteed tool orientation

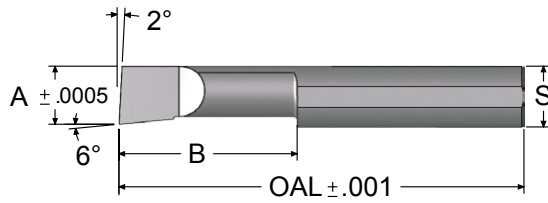
"A" MIN BORE	"B" MAX DEPTH	"S" SHANK DIA.	OAL	ORDER #		EDP #	
				UNCOATED	AITIN+	UNCOATED	AITIN+
0.048	0.150	0.125	1.50	BQ050150	BQ050150A	217201	217963
0.048	0.200	0.125	1.50	BQ050200	BQ050200A	217204	217966
0.048	0.300	0.125	1.50	BQ050300	BQ050300A	217207	217969
0.048	0.400	0.125	1.50	BQ050400	BQ050400A	217210	217972
0.058	0.150	0.125	1.50	BQ060150	BQ060150A	217213	217975
0.058	0.200	0.125	1.50	BQ060200	BQ060200A	217216	217978
0.058	0.300	0.125	1.50	BQ060300	BQ060300A	217219	217981
0.058	0.400	0.125	1.50	BQ060400	BQ060400A	217222	217984
0.058	0.500	0.125	1.50	BQ060500	BQ060500A	217225	217987
0.078	0.150	0.125	1.50	BQ080150	BQ080150A	217228	217990
0.078	0.200	0.125	1.50	BQ080200	BQ080200A	217231	217993
0.078	0.300	0.125	1.50	BQ080300	BQ080300A	217234	217996
0.078	0.400	0.125	1.50	BQ080400	BQ080400A	217237	217999
0.078	0.500	0.125	1.50	BQ080500	BQ080500A	217240	218002
0.078	0.600	0.125	1.50	BQ080600	BQ080600A	217243	218005
0.098	0.150	0.125	1.50	BQ100150	BQ100150A	217246	218008
0.098	0.200	0.125	1.50	BQ100200	BQ100200A	217249	218011
0.098	0.300	0.125	1.50	BQ100300	BQ100300A	217252	218014
0.098	0.400	0.125	1.50	BQ100400	BQ100400A	217255	218017
0.098	0.500	0.125	1.50	BQ100500	BQ100500A	217258	218020
0.098	0.600	0.125	1.50	BQ100600	BQ100600A	217261	218023
0.098	0.700	0.125	1.50	BQ100700	BQ100700A	217264	218026
0.108	0.150	0.125	1.50	BQ110150	BQ110150A	217267	218029
0.108	0.200	0.125	1.50	BQ110200	BQ110200A	217270	218032
0.108	0.300	0.125	1.50	BQ110300	BQ110300A	217273	218035
0.108	0.400	0.125	1.50	BQ110400	BQ110400A	217276	218038
0.108	0.500	0.125	1.50	BQ110500	BQ110500A	217279	218041
0.108	0.600	0.125	1.50	BQ110600	BQ110600A	217282	218044
0.108	0.700	0.125	1.50	BQ110700	BQ110700A	217285	218047
0.118	0.250	0.1875	2.00	BQ120250	BQ120250A	217288	218050
0.118	0.350	0.1875	2.00	BQ120350	BQ120350A	217291	218053
0.118	0.500	0.1875	2.00	BQ120500	BQ120500A	217294	218056
0.118	0.600	0.1875	2.00	BQ120600	BQ120600A	217297	218059
0.118	0.700	0.1875	2.00	BQ120700	BQ120700A	217300	218062
0.118	0.800	0.1875	2.00	BQ120800	BQ120800A	217303	218065

"A" MIN BORE	"B" MAX DEPTH	"S" SHANK DIA.	OAL	ORDER #		EDP #	
				UNCOATED	AITIN+	UNCOATED	AITIN+
0.138	0.250	0.1875	2.00	BQ140250	BQ140250A	217306	218068
0.138	0.400	0.1875	2.00	BQ140400	BQ140400A	217309	218071
0.138	0.500	0.1875	2.00	BQ140500	BQ140500A	217312	218074
0.138	0.600	0.1875	2.00	BQ140600	BQ140600A	217315	218077
0.138	0.700	0.1875	2.00	BQ140700	BQ140700A	217318	218080
0.138	0.750	0.1875	2.00	BQ140750	BQ140750A	217321	218083
0.138	0.800	0.1875	2.00	BQ140800	BQ140800A	217324	218086
0.158	0.250	0.1875	2.00	BQ160250	BQ160250A	217330	218092
0.158	0.400	0.1875	2.00	BQ160400	BQ160400A	217333	218095
0.158	0.500	0.1875	2.00	BQ160500	BQ160500A	217336	218098
0.158	0.600	0.1875	2.00	BQ160600	BQ160600A	217339	218101
0.158	0.750	0.1875	2.00	BQ160750	BQ160750A	217342	218104
0.158	0.900	0.1875	2.00	BQ160900	BQ160900A	217345	218107
0.158	1.000	0.1875	2.00	BQ1601000	BQ1601000A	217327	218089
0.178	0.350	0.250	2.50	BQ180350	BQ180350A	217360	218122
0.178	0.500	0.250	2.50	BQ180500	BQ180500A	217363	218125
0.178	0.600	0.250	2.50	BQ180600	BQ180600A	217366	218128
0.178	0.750	0.250	2.50	BQ180750	BQ180750A	217369	218131
0.178	0.900	0.250	2.50	BQ180900	BQ180900A	217372	218134
0.178	1.000	0.250	2.50	BQ1801000	BQ1801000A	217348	218110
0.178	1.100	0.250	2.50	BQ1801100	BQ1801100A	217351	218113
0.178	1.250	0.250	2.50	BQ1801250	BQ1801250A	217354	218116
0.178	1.500	0.250	2.50	BQ1801500	BQ1801500A	217357	218119
0.198	0.400	0.250	2.50	BQ200400	BQ200400A	217387	218149
0.198	0.500	0.250	2.50	BQ200500	BQ200500A	217390	218152
0.198	0.600	0.250	2.50	BQ200600	BQ200600A	217393	218155
0.198	0.700	0.250	2.50	BQ200700	BQ200700A	217396	218158
0.198	0.800	0.250	2.50	BQ200800	BQ200800A	217399	218161
0.198	0.900	0.250	2.50	BQ200900	BQ200900A	217402	218164
0.198	1.000	0.250	2.50	BQ2001000	BQ2001000A	217375	218137
0.198	1.100	0.250	2.50	BQ2001100	BQ2001100A	217378	218140
0.198	1.200	0.250	2.50	BQ2001200	BQ2001200A	217381	218143
0.198	1.300	0.250	2.50	BQ2001300	BQ2001300A	217384	218146

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

Compatible holders with backstops are available.

QUALIFIED BORING BARS - SOLID CARBIDE



- Qualified length provides quicker tool changes
- Overall length is qualified to ± 0.001
- Minimum bore diameter is qualified to ± 0.0005
- Precision ground flat for guaranteed tool orientation

"A" MIN BORE	"B" MAX DEPTH	"S" SHANK DIA.	OAL	ORDER #		EDP #	
				UNCOATED	AITiN+	UNCOATED	AITiN+
0.228	0.400	0.3125	2.50	BQ230400	BQ230400A	217429	218191
0.228	0.500	0.3125	2.50	BQ230500	BQ230500A	217432	218194
0.228	0.600	0.3125	2.50	BQ230600	BQ230600A	217435	218197
0.228	0.700	0.3125	2.50	BQ230700	BQ230700A	217438	218200
0.228	0.800	0.3125	2.50	BQ230800	BQ230800A	217441	218203
0.228	0.900	0.3125	2.50	BQ230900	BQ230900A	217444	218206
0.228	1.000	0.3125	2.50	BQ2301000	BQ2301000A	217405	218167
0.228	1.100	0.3125	2.50	BQ2301100	BQ2301100A	217408	218170
0.228	1.150	0.3125	2.50	BQ2301150	BQ2301150A	217411	218173
0.228	1.200	0.3125	2.50	BQ2301200	BQ2301200A	217414	218176
0.228	1.250	0.3125	2.50	BQ2301250	BQ2301250A	217417	218179
0.228	1.400	0.3125	2.50	BQ2301400	BQ2301400A	217420	218182
0.228	1.500	0.3125	2.50	BQ2301500	BQ2301500A	217423	218185
0.228	1.600	0.3125	3.00	BQ2301600	BQ2301600A	217426	218188
0.288	0.500	0.3125	2.50	BQ290500	BQ290500A	217468	218230
0.288	0.600	0.3125	2.50	BQ290600	BQ290600A	217471	218233
0.288	0.750	0.3125	2.50	BQ290750	BQ290750A	217474	218236
0.288	0.900	0.3125	2.50	BQ290900	BQ290900A	217477	218239
0.288	1.000	0.3125	2.50	BQ2901000	BQ2901000A	217447	218209
0.288	1.100	0.3125	2.50	BQ2901100	BQ2901100A	217450	218212
0.288	1.250	0.3125	2.50	BQ2901250	BQ2901250A	217453	218215
0.288	1.350	0.3125	2.50	BQ2901350	BQ2901350A	217456	218218
0.288	1.500	0.3125	2.50	BQ2901500	BQ2901500A	217459	218221
0.288	1.600	0.3125	3.00	BQ2901600	BQ2901600A	217462	218224
0.288	1.750	0.3125	3.00	BQ2901750	BQ2901750A	217465	218227
0.318	0.500	0.375	2.50	BQ320500	BQ320500A	217507	218269
0.318	0.600	0.375	2.50	BQ320600	BQ320600A	217510	218272
0.318	0.750	0.375	2.50	BQ320750	BQ320750A	217513	218275
0.318	0.900	0.375	2.50	BQ320900	BQ320900A	217516	218278
0.318	1.000	0.375	2.50	BQ3201000	BQ3201000A	217480	218242
0.318	1.100	0.375	2.50	BQ3201100	BQ3201100A	217483	218245
0.318	1.250	0.375	2.50	BQ3201250	BQ3201250A	217486	218248
0.318	1.500	0.375	2.50	BQ3201500	BQ3201500A	217489	218251
0.318	1.600	0.375	3.00	BQ3201600	BQ3201600A	217492	218254
0.318	1.800	0.375	3.00	BQ3201800	BQ3201800A	217495	218257
0.318	2.000	0.375	4.00	BQ3202000	BQ3202000A	217498	218260
0.318	2.500	0.375	4.00	BQ3202500	BQ3202500A	217501	218263
0.318	3.000	0.375	4.00	BQ3203000	BQ3203000A	217504	218266

"A" MIN BORE	"B" MAX DEPTH	"S" SHANK DIA.	OAL	ORDER #		EDP #	
				UNCOATED	AITiN+	UNCOATED	AITiN+
0.358	0.500	0.375	2.50	BQ360500	BQ360500A	217546	218308
0.358	0.600	0.375	2.50	BQ360600	BQ360600A	217549	218311
0.358	0.750	0.375	2.50	BQ360750	BQ360750A	217552	218314
0.358	0.900	0.375	2.50	BQ360900	BQ360900A	217555	218317
0.358	1.000	0.375	2.50	BQ3601000	BQ3601000A	217519	218281
0.358	1.150	0.375	2.50	BQ3601150	BQ3601150A	217522	218284
0.358	1.250	0.375	2.50	BQ3601250	BQ3601250A	217525	218287
0.358	1.500	0.375	2.50	BQ3601500	BQ3601500A	217528	218290
0.358	1.600	0.375	3.00	BQ3601600	BQ3601600A	217531	218293
0.358	1.800	0.375	3.00	BQ3601800	BQ3601800A	217534	218296
0.358	2.000	0.375	4.00	BQ3602000	BQ3602000A	217537	218299
0.358	2.500	0.375	4.00	BQ3602500	BQ3602500A	217540	218302
0.358	3.000	0.375	4.00	BQ3603000	BQ3603000A	217543	218305
0.488	0.750	0.500	3.00	BQ490750	BQ490750A	217579	218341
0.488	1.000	0.500	3.00	BQ4901000	BQ4901000A	217558	218320
0.488	1.250	0.500	3.00	BQ4901250	BQ4901250A	217561	218323
0.488	1.500	0.500	3.00	BQ4901500	BQ4901500A	217564	218326
0.488	2.000	0.500	4.00	BQ4902000	BQ4902000A	217567	218329
0.488	2.500	0.500	4.00	BQ4902500	BQ4902500A	217570	218332
0.488	2.600	0.500	4.00	BQ4902600	BQ4902600A	217573	218335
0.488	2.750	0.500	4.00	BQ4902750	BQ4902750A	217576	218338

THREAD MILLS

SINGLE POINT TOOLS

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 MAX DOC	.050-.100 MAX DOC	.110-.160 MAX DOC	.180-.230 MAX DOC	.290-.320 MAX DOC	.360+ 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

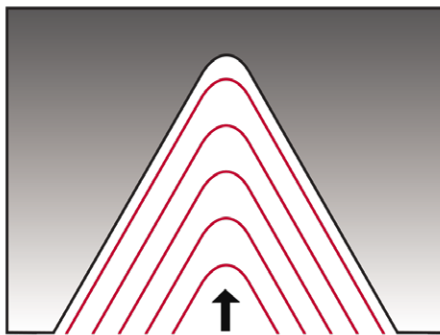
Threads not ending in a relief need at least one thread pitch length of pullout

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

SINGLE POINT THREADING TROUBLESHOOTING

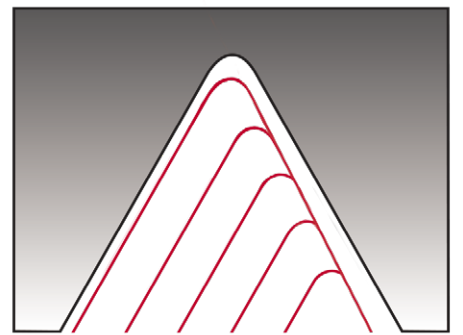
PROBLEM	CAUSE	SOLUTION
RAPID FLANK WEAR	CUTTING CONDITIONS	Check for excessive speed - see chart.
	PART	Make sure prior operation did not work harden the material.
	TOOL	Select a coated tool.
BUILT-UP EDGE	TOOL	Select a coated tool.
	CUTTING FORCE	Increase the number of passes.
	HEAT	Use the SCT coolant 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

