



World Leaders in
Tools Manufacturing

CARMET TOOLS & INSERTS Ltd.



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Solid carbide boring tools

RETAINING RING GROOVING TOOLS

"O" RING GROOVING TOOLS

RADIUS GROOVING TOOLS

FACE GROOVING TOOLS

PROFILE GROOVING

THREADING TOOLS

RADIUS GROOVING TOOLS

BORING BARS & TOOLHOLDERS



SOLID CARBIDE QUICK CHANGE PROFILING TOOLS.

| <u>MINIMUM</u> <u>BORE</u> | <u>MAXIMUM</u> <u>BORE</u> <u>DEPTH</u> | <u>CUTTING</u> <u>DIRECTION</u> | <u>SHANK</u> <u>DIAMETER</u> |
|-------------------------------|---|------------------------------------|---------------------------------|
| .070" | .200" | Right Hand | 3/16" |
| .070" | .200" | Right Hand | 3/16" |
| .070" | .300" | Right Hand | 3/16" |
| .070" | .300" | Right Hand | 3/16" |
| .070" | .500" | Right Hand | 3/16" |
| .070" | .500" | Right Hand | 3/16" |
| 7/64" | .250" | Right Hand | 3/16" |
| 7/64" | .250" | Right Hand | 3/16" |
| 7/64" | .500" | Right Hand | 3/16" |

| | | | |
|-------|-------|------------|-------|
| 7/64" | .500" | Right Hand | 3/16" |
| .120" | .250" | Right Hand | 3/16" |
| .120" | .250" | Right Hand | 3/16" |
| .120" | .500" | Right Hand | 3/16" |
| .120" | .500" | Right Hand | 3/16" |
| .120" | .750" | Right Hand | 3/16" |
| .120" | .750" | Right Hand | 3/16" |
| .160" | 1" | Right Hand | 3/16" |
| .160" | 1" | Right Hand | 3/16" |
| .160" | .500" | Right Hand | 3/16" |
| .160" | .500" | Right Hand | 3/16" |
| .160" | .750" | Right Hand | 3/16" |
| .160" | .750" | Right Hand | 3/16" |
| .180" | 1" | Right Hand | 1/4" |
| .180" | 1" | Right Hand | 1/4" |
| .180" | .500" | Right Hand | 1/4" |
| .180" | .500" | Right Hand | 1/4" |
| .180" | .750" | Right Hand | 1/4" |
| .180" | .750" | Right Hand | 1/4" |
| .230" | 1" | Right Hand | 3/16" |
| .230" | 1" | Right Hand | 3/16" |

| | | | |
|-------|--------|------------|-------|
| .230" | 1.250" | Right Hand | 3/16" |
| .230" | 1.250" | Right Hand | 3/16" |
| .230" | .750" | Right Hand | 3/16" |
| .230" | .750" | Right Hand | 3/16" |
| .300" | 1" | Right Hand | 3/16" |
| .300" | 1" | Right Hand | 3/16" |
| .300" | 1.250" | Right Hand | 3/16" |
| .300" | 1.250" | Right Hand | 3/16" |
| .360" | 1" | Right Hand | 3/8" |
| .360" | 1" | Right Hand | 3/8" |
| .360" | 1.250" | Right Hand | 3/8" |
| .360" | 1.250" | Right Hand | 3/8" |
| .460" | 1" | Right Hand | 1/2" |
| .460" | 1" | Right Hand | 1/2" |
| .460" | 1.500" | Right Hand | 1/2" |
| .460" | 1.500" | Right Hand | 1/2" |
| .460" | 1.800" | Right Hand | 1/2" |
| .460" | 1.800" | Right Hand | 1/2" |
| .490" | 1" | Right Hand | 1/2" |
| .490" | 1" | Right Hand | 1/2" |
| .490" | 1.500" | Right Hand | 1/2" |

| | | | |
|-------|--------|------------|------|
| .490" | 1.500" | Right Hand | 1/2" |
| .490" | 1.800" | Right Hand | 1/2" |
| .490" | 1.800" | Right Hand | 1/2" |



| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>TOOL MATERIAL</u> | <u>CUTTING DIRECTION</u> | <u>SHANK DIAMETER</u> |
|-------------|---------------------|---------------------------|----------------------|--------------------------|-----------------------|
| Boring Bars | .050" | .150" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .050" | .200" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .050" | .300" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .050" | .400" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .060" | .150" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .060" | .200" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .060" | .300" | Solid Carbide | Right Hand | 1/8" |

| | | | | | |
|-------------|-------|-------|---------------|------------|------|
| Boring Bars | .060" | .400" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .060" | .500" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .080" | .150" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .080" | .200" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .080" | .300" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .080" | .400" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .080" | .500" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .080" | .600" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .100" | .150" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .100" | .200" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .100" | .300" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .100" | .400" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .100" | .500" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .100" | .600" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .100" | .700" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | 7/64" | .150" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | 7/64" | .200" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | 7/64" | .300" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | 7/64" | .400" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | 7/64" | .500" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | 7/64" | .600" | Solid Carbide | Right Hand | 1/8" |

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|-------------|-------|-------|---------------|------------|-------|
| Boring Bars | 7/64" | .700" | Solid Carbide | Right Hand | 1/8" |
| Boring Bars | .120" | .250" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .120" | .350" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .120" | .500" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .120" | .600" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .120" | .700" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .120" | .800" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | 9/64" | .250" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | 9/64" | .400" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | 9/64" | .500" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | 9/64" | .600" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | 9/64" | .700" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | 9/64" | .750" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | 9/64" | .800" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .160" | .250" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .160" | .400" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .160" | .500" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .160" | .600" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .160" | .750" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .160" | .900" | Solid Carbide | Right Hand | 3/16" |
| Boring Bars | .160" | 1" | Solid Carbide | Right Hand | 3/16" |

| | | | | | |
|-------------|-------|--------|---------------|------------|-------|
| Boring Bars | .180" | .350" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .180" | .500" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .180" | .600" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .180" | .750" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .180" | .900" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .180" | 1" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .180" | 1.100" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .180" | 1.250" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .180" | 1.500" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .200" | .400" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .200" | .500" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .200" | .600" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .200" | .700" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .200" | .800" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .200" | .900" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .200" | 1" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .200" | 1.100" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .200" | 1.200" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .200" | 1.300" | Solid Carbide | Right Hand | 1/4" |
| Boring Bars | .230" | .400" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | .500" | Solid Carbide | Right Hand | 5/16" |

| | | | | | |
|-------------|-------|--------|---------------|------------|-------|
| Boring Bars | .230" | .600" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | .700" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | .800" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | .900" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | 1" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | 1.100" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | 1.150" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | 1.200" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | 1.250" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | 1.400" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | 1.500" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .230" | 1.600" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .290" | .500" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .290" | .600" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .290" | .750" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .290" | .900" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .290" | 1" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .290" | 1.100" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .290" | 1.250" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .290" | 1.350" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .290" | 1.500" | Solid Carbide | Right Hand | 5/16" |

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|-------------|-------|--------|---------------|------------|-------|
| Boring Bars | .290" | 1.600" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .290" | 1.750" | Solid Carbide | Right Hand | 5/16" |
| Boring Bars | .320" | .500" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .320" | .600" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .320" | .750" | Solid Carbide | Right Hand | 3/8" |
| | | | | | |
| Boring Bars | .320" | .900" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .320" | 1" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .320" | 1.100" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .320" | 1.250" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .320" | 1.500" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .320" | 1.600" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .320" | 1.800" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .320" | 2.000" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .320" | 2.500" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .320" | 3.000" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | .500" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | .600" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | .750" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | .900" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | 1" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | 1.150" | Solid Carbide | Right Hand | 3/8" |

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|-------------|-------|--------|---------------|------------|------|
| Boring Bars | .360" | 1.250" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | 1.500" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | 1.600" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | 1.800" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | 2.000" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | 2.500" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .360" | 3.000" | Solid Carbide | Right Hand | 3/8" |
| Boring Bars | .490" | .750" | Solid Carbide | Right Hand | 1/2" |
| Boring Bars | .490" | 1" | Solid Carbide | Right Hand | 1/2" |
| Boring Bars | .490" | 1.250" | Solid Carbide | Right Hand | 1/2" |
| Boring Bars | .490" | 1.500" | Solid Carbide | Right Hand | 1/2" |
| Boring Bars | .490" | 2.000" | Solid Carbide | Right Hand | 1/2" |
| Boring Bars | .490" | 2.500" | Solid Carbide | Right Hand | 1/2" |
| Boring Bars | .490" | 2.750" | Solid Carbide | Right Hand | 1/2" |
| Boring Bars | .490" | 3.000" | Solid Carbide | Right Hand | 1/2" |
| Boring Bars | .490" | 3.500" | Solid Carbide | Right Hand | 1/2" |
| Boring Bars | .490" | 4.000" | Solid Carbide | Right Hand | 1/2" |
| Boring Bars | .490" | 4.500" | Solid Carbide | Right Hand | 1/2" |



SOLID CARBIDE RETAINING RING GROOVING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|----------------|---------------------|---------------------------|-----------------------|
| Grooving Tools | 1/4" | 1/4" | 1/4" |
| Grooving Tools | 1/4" | 3/8" | 1/4" |
| Grooving Tools | 1/4" | 1/2" | 1/4" |
| Grooving Tools | 1/4" | 5/8" | 1/4" |
| Grooving Tools | 1/4" | 1/4" | 1/4" |

| | | | |
|----------------|-------|--------|-------|
| Grooving Tools | 1/4" | 3/8" | 1/4" |
| Grooving Tools | 1/4" | 1/2" | 1/4" |
| Grooving Tools | 1/4" | 5/8" | 1/4" |
| Grooving Tools | 1/4" | 1/4" | 1/4" |
| Grooving Tools | 1/4" | 3/8" | 1/4" |
| Grooving Tools | 1/4" | 1/2" | 1/4" |
| Grooving Tools | 1/4" | 5/8" | 1/4" |
| Grooving Tools | 5/16" | 1/4" | 5/16" |
| Grooving Tools | 5/16" | 3/8" | 5/16" |
| Grooving Tools | 5/16" | 1/2" | 5/16" |
| Grooving Tools | 5/16" | 3/4" | 5/16" |
| Grooving Tools | 5/16" | 1/4" | 5/16" |
| Grooving Tools | 5/16" | 3/8" | 5/16" |
| Grooving Tools | 5/16" | 1/2" | 5/16" |
| Grooving Tools | 5/16" | 3/4" | 5/16" |
| Grooving Tools | 3/8" | 1/4" | 3/8" |
| Grooving Tools | 3/8" | 3/8" | 3/8" |
| Grooving Tools | 3/8" | 1/2" | 3/8" |
| Grooving Tools | 3/8" | 3/4" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1-1/4" | 3/8" |

| | | | |
|----------------|------|--------|------|
| Grooving Tools | 3/8" | 1/4" | 3/8" |
| Grooving Tools | 3/8" | 3/8" | 3/8" |
| Grooving Tools | 3/8" | 1/2" | 3/8" |
| Grooving Tools | 3/8" | 3/4" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1-1/4" | 3/8" |
| Grooving Tools | 3/8" | 1/4" | 3/8" |
| Grooving Tools | 3/8" | 3/8" | 3/8" |
| Grooving Tools | 3/8" | 1/2" | 3/8" |
| Grooving Tools | 3/8" | 3/4" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1-1/4" | 3/8" |
| Grooving Tools | 3/8" | 1/4" | 3/8" |
| Grooving Tools | 3/8" | 3/8" | 3/8" |
| Grooving Tools | 3/8" | 1/2" | 3/8" |
| Grooving Tools | 3/8" | 3/4" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1-1/4" | 3/8" |
| Grooving Tools | 3/8" | 3/8" | 3/8" |
| Grooving Tools | 3/8" | 1/2" | 3/8" |
| Grooving Tools | 3/8" | 3/4" | 3/8" |

| | | | |
|----------------|------|--------|------|
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1-1/4" | 3/8" |
| Grooving Tools | 3/8" | 1/4" | 3/8" |
| Grooving Tools | 3/8" | 3/8" | 3/8" |
| Grooving Tools | 3/8" | 1/2" | 3/8" |
| Grooving Tools | 3/8" | 3/4" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1-1/4" | 3/8" |
| Grooving Tools | 1/2" | 1/2" | 1/2" |
| Grooving Tools | 1/2" | 3/4" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1-1/4" | 1/2" |
| Grooving Tools | 1/2" | 1-1/2" | 1/2" |
| Grooving Tools | 1/2" | 1/2" | 1/2" |
| Grooving Tools | 1/2" | 3/4" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1-1/4" | 1/2" |
| Grooving Tools | 1/2" | 1-1/2" | 1/2" |
| Grooving Tools | 1/2" | 3/4" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1-1/4" | 1/2" |

| | | | |
|----------------|------|----------|------|
| Grooving Tools | 1/2" | 1-1/2" | 1/2" |
| Grooving Tools | 1/2" | 3/4" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1-1/4" | 1/2" |
| Grooving Tools | 1/2" | 1-1/2" | 1/2" |
| Grooving Tools | 1/2" | 3/4" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1-1/4" | 1/2" |
| Grooving Tools | 1/2" | 1-1/2" | 1/2" |
| Toolholders | N/A | Assorted | 1/2" |
| Toolholders | N/A | Assorted | 1/2" |
| Toolholders | N/A | Assorted | 1/2" |
| Toolholders | N/A | Assorted | 1/2" |
| Toolholders | N/A | Assorted | 1/2" |
| Toolholders | N/A | Assorted | 5/8" |
| Toolholders | N/A | Assorted | 5/8" |
| Toolholders | N/A | Assorted | 5/8" |
| Toolholders | N/A | Assorted | 5/8" |
| Toolholders | N/A | Assorted | 5/8" |
| Toolholders | N/A | Assorted | 3/4" |
| Toolholders | N/A | Assorted | 3/4" |



SOLID CARBIDE 60° INTERNAL THREADING TOOLS

| <u>MINIMUM HOLE DIAMETER</u> | <u>THREADS PER INCH</u> | <u>PROJECTION</u> |
|--------------------------------------|---------------------------------|-------------------|
| .040" | 56 to 76 | .015" |
| .040" | 56 to 76 | .015" |
| .040" | 56 to 76 | .015" |
| .050" | 48 to 76 | .020" |
| .050" | 48 to 76 | .020" |
| .050" | 48 to 76 | .020" |

| | | |
|-------|----------|-------|
| .060" | 40 to 76 | .020" |
| .060" | 40 to 76 | .020" |
| .060" | 40 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |

| | | |
|-------|----------|-------|
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |

| | | |
|-------|----------|-------|
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .490" | 8 to 24 | .120" |
| .490" | 8 to 24 | .120" |
| .490" | 8 to 24 | .120" |





QUICK CHANGE BORING BARS & TOOLHOLDERS

Machine aluminum, copper, brass, steels, stainless steels, high temperature alloys, thermoplastics, exotic metals and composites.

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|-------------|-------------------------|-----------------------------------|---------------------------|
| Boring Bars | .050" | .150" | 3/16" |
| Boring Bars | .050" | .200" | 3/16" |
| Boring Bars | .050" | .300" | 3/16" |
| Boring Bars | .050" | .400" | 3/16" |
| Boring Bars | .060" | .150" | 3/16" |
| Boring Bars | .060" | .200" | 3/16" |
| Boring Bars | .060" | .300" | 3/16" |
| Boring Bars | .060" | .400" | 3/16" |
| Boring Bars | .060" | .500" | 3/16" |
| Boring Bars | .080" | .200" | 3/16" |
| Boring Bars | .080" | .300" | 3/16" |
| Boring Bars | .080" | .500" | 3/16" |
| Boring Bars | .080" | .600" | 3/16" |
| Boring Bars | .100" | .200" | 3/16" |
| Boring Bars | .100" | .300" | 3/16" |
| Boring Bars | .100" | .500" | 3/16" |

| | | | |
|-------------|-------|--------|-------|
| Boring Bars | .100" | .700" | 3/16" |
| Boring Bars | 7/64" | .300" | 3/16" |
| Boring Bars | 7/64" | .500" | 3/16" |
| Boring Bars | 7/64" | .700" | 3/16" |
| Boring Bars | .120" | .250" | 3/16" |
| Boring Bars | .120" | .350" | 3/16" |
| Boring Bars | .120" | .500" | 3/16" |
| Boring Bars | .120" | .700" | 3/16" |
| Boring Bars | .120" | .800" | 3/16" |
| Boring Bars | 9/64" | .400" | 3/16" |
| Boring Bars | 9/64" | .600" | 3/16" |
| Boring Bars | 9/64" | .800" | 3/16" |
| Boring Bars | .160" | .400" | 3/16" |
| Boring Bars | .160" | .600" | 3/16" |
| Boring Bars | .160" | .750" | 3/16" |
| Boring Bars | .160" | 1" | 3/16" |
| Boring Bars | .180" | .500" | 1/4" |
| Boring Bars | .180" | .750" | 1/4" |
| Boring Bars | .180" | 1" | 1/4" |
| Boring Bars | .180" | 1.250" | 1/4" |
| Boring Bars | .180" | 1.500" | 1/4" |

| | | | |
|-------------|-------|--------|-------|
| Boring Bars | .200" | .500" | 1/4" |
| Boring Bars | .200" | .750" | 1/4" |
| Boring Bars | .200" | 1" | 1/4" |
| Boring Bars | .200" | 1.200" | 1/4" |
| Boring Bars | .200" | 1.500" | 1/4" |
| Boring Bars | .230" | .500" | 5/16" |
| Boring Bars | .230" | .750" | 5/16" |
| Boring Bars | .230" | 1" | 5/16" |
| Boring Bars | .230" | 1.250" | 5/16" |
| Boring Bars | .230" | 1.500" | 5/16" |
| Boring Bars | .230" | 1.600" | 5/16" |
| Boring Bars | .290" | .500" | 5/16" |
| Boring Bars | .290" | .750" | 5/16" |
| Boring Bars | .290" | 1" | 5/16" |
| Boring Bars | .290" | 1.250" | 5/16" |
| Boring Bars | .290" | 1.500" | 5/16" |
| Boring Bars | .290" | 1.750" | 5/16" |
| Boring Bars | .320" | .500" | 3/8" |
| Boring Bars | .320" | .750" | 3/8" |
| Boring Bars | .320" | 1" | 3/8" |
| Boring Bars | .320" | 1.250" | 3/8" |

| | | | |
|-------------|-------|--------|------|
| Boring Bars | .320" | 1.500" | 3/8" |
| Boring Bars | .320" | 1.800" | 3/8" |
| Boring Bars | .320" | 2.000" | 3/8" |
| Boring Bars | .320" | 2.500" | 3/8" |
| Boring Bars | .360" | .750" | 3/8" |
| Boring Bars | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1.250" | 3/8" |
| Boring Bars | .360" | 1.500" | 3/8" |
| Boring Bars | .360" | 1.800" | 3/8" |
| Boring Bars | .360" | 2.000" | 3/8" |
| Boring Bars | .360" | 2.500" | 3/8" |
| Boring Bars | .460" | 1" | 1/2" |
| Boring Bars | .460" | 1.250" | 1/2" |
| Boring Bars | .460" | 1.500" | 1/2" |
| Boring Bars | .460" | 2.000" | 1/2" |
| Boring Bars | .460" | 2.500" | 1/2" |
| Boring Bars | .460" | 3.000" | 1/2" |
| Boring Bars | .490" | 1" | 1/2" |
| Boring Bars | .490" | 1.250" | 1/2" |
| Boring Bars | .490" | 1.500" | 1/2" |
| Boring Bars | .490" | 2.000" | 1/2" |

| | | | |
|-------------|-------|--------|------|
| Boring Bars | .490" | 2.500" | 1/2" |
| Boring Bars | .490" | 3.000" | 1/2" |
| Toolholders | N/A | N/A | 1/2" |
| Toolholders | N/A | N/A | 1/2" |
| Toolholders | N/A | N/A | 5/8" |
| Toolholders | N/A | N/A | 5/8" |
| Toolholders | N/A | N/A | 5/8" |
| Toolholders | N/A | N/A | 5/8" |
| Toolholders | N/A | N/A | 3/4" |
| Toolholders | N/A | N/A | 3/4" |
| Toolholders | N/A | N/A | 3/4" |
| Toolholders | N/A | N/A | 3/4" |
| Toolholders | N/A | N/A | 3/4" |
| Toolholders | N/A | N/A | 1" |
| Toolholders | N/A | N/A | 1" |
| Toolholders | N/A | N/A | 1" |
| Toolholders | N/A | N/A | 1" |



SOLID CARBIDE INTERNAL THREADING TOOLS

Minimum minor diameter ranges: 0.035" - 0.460"

Maximum thread depths ranges: 0.075" - 2.000"

TPI ranges: up to 80 TPI

Shank sizes: 3/16", 1/4", 5/16", 3/8" & 1/2"

Point radius: .002"

| <u>MINIMUM HOLE DIAMETER</u> | <u>THREADS PER INCH</u> | <u>PROJECTION</u> |
|--------------------------------------|---------------------------------|-------------------|
| .035" | 56 to 80 | .015" |
| .035" | 56 to 80 | .015" |
| .035" | 56 to 80 | .015" |
| .040" | 56 to 80 | .015" |
| .040" | 56 to 80 | .015" |

| | | |
|-------|----------|-------|
| .040" | 56 to 80 | .015" |
| .050" | 48 to 80 | .020" |
| .050" | 48 to 80 | .020" |
| .050" | 48 to 80 | .020" |
| .060" | 40 to 80 | .020" |
| .060" | 40 to 80 | .020" |
| .060" | 40 to 80 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |

| | | |
|-------|----------|-------|
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .230" | 14 to 40 | .055" |

| | | |
|-------|----------|-------|
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .460" | 8 to 24 | .120" |
| .460" | 8 to 24 | .120" |
| .460" | 8 to 24 | .120" |

| | | |
|-------|---------|-------|
| .490" | 8 to 24 | .120" |
| .490" | 8 to 24 | .120" |
| .490" | 8 to 24 | .120" |



SOLID CARBIDE BORING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|---------------------|---------------------|---------------------------|-----------------------|
| Radius Boring Tools | .040" | .150" | 1/8" |

| | | | |
|---------------------|-------|-------|------|
| Boring Bars | .040" | .150" | 1/8" |
| Boring Bars | .050" | .150" | 1/8" |
| Boring Bars | .050" | .150" | 1/8" |
| Radius Boring Tools | .050" | .150" | 1/8" |
| Radius Boring Tools | .050" | .200" | 1/8" |
| Boring Bars | .050" | .200" | 1/8" |
| Boring Bars | .050" | .200" | 1/8" |
| Boring Bars | .050" | .200" | 1/8" |
| Radius Boring Tools | .050" | .200" | 1/8" |
| Radius Boring Tools | .050" | .300" | 1/8" |
| Boring Bars | .050" | .300" | 1/8" |
| Boring Bars | .050" | .300" | 1/8" |
| Boring Bars | .050" | .300" | 1/8" |
| Radius Boring Tools | .050" | .300" | 1/8" |
| Radius Boring Tools | .050" | .400" | 1/8" |
| Boring Bars | .050" | .400" | 1/8" |
| Boring Bars | .050" | .400" | 1/8" |
| Boring Bars | .050" | .400" | 1/8" |
| Radius Boring Tools | .050" | .400" | 1/8" |

| | | | |
|---------------------|-------|-------|------|
| Radius Boring Tools | .050" | .150" | 1/8" |
| Boring Bars | .050" | .150" | 1/8" |
| Boring Bars | .060" | .150" | 1/8" |
| Boring Bars | .060" | .150" | 1/8" |
| Radius Boring Tools | .060" | .150" | 1/8" |
| Radius Boring Tools | .060" | .200" | 1/8" |
| Boring Bars | .060" | .200" | 1/8" |
| Boring Bars | .060" | .200" | 1/8" |
| Boring Bars | .060" | .200" | 1/8" |
| Radius Boring Tools | .060" | .200" | 1/8" |
| Radius Boring Tools | .060" | .300" | 1/8" |
| Boring Bars | .060" | .300" | 1/8" |
| Boring Bars | .060" | .300" | 1/8" |
| Boring Bars | .060" | .300" | 1/8" |
| Radius Boring Tools | .060" | .300" | 1/8" |
| Radius Boring Tools | .060" | .400" | 1/8" |
| Boring Bars | .060" | .400" | 1/8" |
| Boring Bars | .060" | .400" | 1/8" |
| Boring Bars | .060" | .400" | 1/8" |

| | | | |
|---------------------|-------|-------|------|
| Radius Boring Tools | .060" | .400" | 1/8" |
| Radius Boring Tools | .060" | .500" | 1/8" |
| Boring Bars | .060" | .500" | 1/8" |
| Boring Bars | .060" | .500" | 1/8" |
| Boring Bars | .060" | .500" | 1/8" |
| Radius Boring Tools | .060" | .500" | 1/8" |
| Radius Boring Tools | .070" | .150" | 1/8" |
| Boring Bars | .070" | .150" | 1/8" |
| Boring Bars | .080" | .150" | 1/8" |
| Boring Bars | .080" | .150" | 1/8" |
| Radius Boring Tools | .080" | .150" | 1/8" |
| Radius Boring Tools | .080" | .200" | 1/8" |
| Boring Bars | .080" | .200" | 1/8" |
| Boring Bars | .080" | .200" | 1/8" |
| Boring Bars | .080" | .200" | 1/8" |
| Radius Boring Tools | .080" | .200" | 1/8" |
| Radius Boring Tools | .080" | .300" | 1/8" |
| Boring Bars | .080" | .300" | 1/8" |
| Boring Bars | .080" | .300" | 1/8" |

| | | | |
|---------------------|-------|-------|------|
| Boring Bars | .080" | .300" | 1/8" |
| Radius Boring Tools | .080" | .300" | 1/8" |
| Radius Boring Tools | .080" | .400" | 1/8" |
| Boring Bars | .080" | .400" | 1/8" |
| Boring Bars | .080" | .400" | 1/8" |
| Boring Bars | .080" | .400" | 1/8" |
| Radius Boring Tools | .080" | .400" | 1/8" |
| Radius Boring Tools | .080" | .500" | 1/8" |
| Boring Bars | .080" | .500" | 1/8" |
| Boring Bars | .080" | .500" | 1/8" |
| Boring Bars | .080" | .500" | 1/8" |
| Radius Boring Tools | .080" | .500" | 1/8" |
| Radius Boring Tools | .080" | .600" | 1/8" |
| Boring Bars | .080" | .600" | 1/8" |
| Boring Bars | .080" | .600" | 1/8" |
| Boring Bars | .080" | .600" | 1/8" |
| Radius Boring Tools | .080" | .600" | 1/8" |
| Radius Boring Tools | .090" | .150" | 1/8" |
| Boring Bars | .090" | .150" | 1/8" |

| | | | |
|---------------------|-------|-------|------|
| Boring Bars | .100" | .150" | 1/8" |
| Boring Bars | .100" | .150" | 1/8" |
| Radius Boring Tools | .100" | .150" | 1/8" |
| Radius Boring Tools | .100" | .200" | 1/8" |
| Boring Bars | .100" | .200" | 1/8" |
| Boring Bars | .100" | .200" | 1/8" |
| Boring Bars | .100" | .200" | 1/8" |
| Radius Boring Tools | .100" | .200" | 1/8" |
| Radius Boring Tools | .100" | .300" | 1/8" |
| Boring Bars | .100" | .300" | 1/8" |
| Boring Bars | .100" | .300" | 1/8" |
| Boring Bars | .100" | .300" | 1/8" |
| Radius Boring Tools | .100" | .300" | 1/8" |
| Radius Boring Tools | .100" | .400" | 1/8" |
| Boring Bars | .100" | .400" | 1/8" |
| Boring Bars | .100" | .400" | 1/8" |
| Boring Bars | .100" | .400" | 1/8" |
| Radius Boring Tools | .100" | .400" | 1/8" |
| | | | |
| | | | |

| | | | |
|---------------------|-------|---------------|----------------|
| .100" | .500" | Solid Carbide | \$28.08 |
| Boring Bars | .100" | .500" | 1/8" |
| Boring Bars | .100" | .500" | 1/8" |
| Boring Bars | .100" | .500" | 1/8" |
| Radius Boring Tools | .100" | .500" | 1/8" |
| Radius Boring Tools | .100" | .600" | 1/8" |
| Boring Bars | .100" | .600" | 1/8" |
| Boring Bars | .100" | .600" | 1/8" |
| Boring Bars | .100" | .600" | 1/8" |
| Radius Boring Tools | .100" | .600" | 1/8" |
| Radius Boring Tools | .100" | .700" | 1/8" |
| Boring Bars | .100" | .700" | 1/8" |
| Boring Bars | .100" | .700" | 1/8" |
| Boring Bars | .100" | .700" | 1/8" |
| Radius Boring Tools | .100" | .700" | 1/8" |
| Radius Boring Tools | .100" | .150" | 1/8" |
| Boring Bars | .100" | .150" | 1/8" |
| Boring Bars | 7/64" | .150" | 1/8" |
| Radius Boring Tools | 7/64" | .150" | 1/8" |

| | | | |
|---------------------|-------|-------|------|
| Radius Boring Tools | 7/64" | .200" | 1/8" |
| Boring Bars | 7/64" | .200" | 1/8" |
| Boring Bars | 7/64" | .200" | 1/8" |
| Boring Bars | 7/64" | .200" | 1/8" |
| Radius Boring Tools | 7/64" | .200" | 1/8" |
| Radius Boring Tools | 7/64" | .300" | 1/8" |
| Boring Bars | 7/64" | .300" | 1/8" |
| Boring Bars | 7/64" | .300" | 1/8" |
| Boring Bars | 7/64" | .300" | 1/8" |
| Radius Boring Tools | 7/64" | .300" | 1/8" |
| Radius Boring Tools | 7/64" | .400" | 1/8" |
| Boring Bars | 7/64" | .400" | 1/8" |
| Boring Bars | 7/64" | .400" | 1/8" |
| Boring Bars | 7/64" | .400" | 1/8" |
| Radius Boring Tools | 7/64" | .400" | 1/8" |
| Radius Boring Tools | 7/64" | .500" | 1/8" |
| Boring Bars | 7/64" | .500" | 1/8" |
| Boring Bars | 7/64" | .500" | 1/8" |
| Boring Bars | 7/64" | .500" | 1/8" |

| | | | |
|---------------------|-------|-------|-------|
| Radius Boring Tools | 7/64" | .500" | 1/8" |
| Radius Boring Tools | 7/64" | .600" | 1/8" |
| Boring Bars | 7/64" | .600" | 1/8" |
| Boring Bars | 7/64" | .600" | 1/8" |
| Boring Bars | 7/64" | .600" | 1/8" |
| Radius Boring Tools | 7/64" | .600" | 1/8" |
| Radius Boring Tools | 7/64" | .700" | 1/8" |
| Boring Bars | 7/64" | .700" | 1/8" |
| Boring Bars | 7/64" | .700" | 1/8" |
| Boring Bars | 7/64" | .700" | 1/8" |
| Radius Boring Tools | 7/64" | .700" | 1/8" |
| Radius Boring Tools | 7/64" | .250" | 3/16" |
| Boring Bars | 7/64" | .250" | 3/16" |
| Boring Bars | .120" | .250" | 3/16" |
| Boring Bars | .120" | .250" | 3/16" |
| Radius Boring Tools | .120" | .250" | 3/16" |
| Radius Boring Tools | .120" | .350" | 3/16" |
| Boring Bars | .120" | .350" | 3/16" |
| Boring Bars | .120" | .350" | 3/16" |

| | | | |
|---------------------|-------|-------|-------|
| Boring Bars | .120" | .350" | 3/16" |
| Radius Boring Tools | .120" | .350" | 3/16" |
| Radius Boring Tools | .120" | .500" | 3/16" |
| Boring Bars | .120" | .500" | 3/16" |
| Boring Bars | .120" | .500" | 3/16" |
| Boring Bars | .120" | .500" | 3/16" |
| Radius Boring Tools | .120" | .500" | 3/16" |
| Radius Boring Tools | .120" | .600" | 3/16" |
| Boring Bars | .120" | .600" | 3/16" |
| Boring Bars | .120" | .600" | 3/16" |
| Boring Bars | .120" | .600" | 3/16" |
| Radius Boring Tools | .120" | .600" | 3/16" |
| Radius Boring Tools | .120" | .700" | 3/16" |
| Boring Bars | .120" | .700" | 3/16" |
| Boring Bars | .120" | .700" | 3/16" |
| Boring Bars | .120" | .700" | 3/16" |
| Radius Boring Tools | .120" | .700" | 3/16" |
| Radius Boring Tools | .120" | .800" | 3/16" |
| Boring Bars | .120" | .800" | 3/16" |

| | | | |
|---------------------|-------|-------|-------|
| Boring Bars | .120" | .800" | 3/16" |
| Boring Bars | .120" | .800" | 3/16" |
| Radius Boring Tools | .120" | .800" | 3/16" |
| Radius Boring Tools | .135" | .250" | 3/16" |
| Boring Bars | .135" | .250" | 3/16" |
| Boring Bars | .140" | .250" | 3/16" |
| Boring Bars | .140" | .250" | 3/16" |
| Radius Boring Tools | .140" | .250" | 3/16" |
| Radius Boring Tools | .140" | .400" | 3/16" |
| Boring Bars | .140" | .400" | 3/16" |
| Boring Bars | .140" | .400" | 3/16" |
| Boring Bars | .140" | .400" | 3/16" |
| Radius Boring Tools | .140" | .400" | 3/16" |
| Radius Boring Tools | .140" | .500" | 3/16" |
| Boring Bars | .140" | .500" | 3/16" |
| Boring Bars | .140" | .500" | 3/16" |
| Boring Bars | .140" | .500" | 3/16" |
| Radius Boring Tools | .140" | .500" | 3/16" |
| Radius Boring Tools | .140" | .600" | 3/16" |

| | | | |
|-------------|-------|-------|-------|
| Boring Bars | .140" | .600" | 3/16" |
|-------------|-------|-------|-------|

| TYPE | <u>MINIMUM</u> | <u>MAXIMUM</u> | <u>SHANK</u> <u>DIAMETER</u> |
|---------------------|----------------|-----------------------------|---------------------------------|
| | <u>BORE</u> | <u>BORE</u> <u>DEPTH</u> | |
| Boring Bars | .140" | .600" | 3/16" |
| Boring Bars | .140" | .600" | 3/16" |
| Radius Boring Tools | .140" | .600" | 3/16" |
| Radius Boring Tools | .140" | .700" | 3/16" |
| Boring Bars | .140" | .700" | 3/16" |
| Boring Bars | .140" | .700" | 3/16" |
| Radius Boring Tools | .140" | .700" | 3/16" |
| Radius Boring Tools | .140" | .750" | 3/16" |
| Boring Bars | .140" | .750" | 3/16" |
| Boring Bars | .140" | .750" | 3/16" |
| Boring Bars | .140" | .750" | 3/16" |
| Radius Boring Tools | .140" | .750" | 3/16" |
| Radius Boring Tools | .140" | .800" | 3/16" |
| Boring Bars | .140" | .800" | 3/16" |
| Boring Bars | .140" | .800" | 3/16" |

| | | | |
|---------------------|-------|-------|-------|
| Boring Bars | .140" | .800" | 3/16" |
| Radius Boring Tools | .140" | .800" | 3/16" |
| Radius Boring Tools | .160" | 1" | 3/16" |
| Boring Bars | .160" | 1" | 3/16" |
| Boring Bars | .160" | 1" | 3/16" |
| Boring Bars | .160" | 1" | 3/16" |
| Radius Boring Tools | .160" | 1" | 3/16" |
| Radius Boring Tools | 5/32" | .250" | 3/16" |
| Boring Bars | 5/32" | .250" | 3/16" |
| Boring Bars | .160" | .250" | 3/16" |
| Boring Bars | .160" | .250" | 3/16" |
| Radius Boring Tools | .160" | .250" | 3/16" |
| Radius Boring Tools | .160" | .400" | 3/16" |
| Boring Bars | .160" | .400" | 3/16" |
| Boring Bars | .160" | .400" | 3/16" |
| Boring Bars | .160" | .400" | 3/16" |
| Radius Boring Tools | .160" | .400" | 3/16" |
| Radius Boring Tools | .160" | .500" | 3/16" |
| Boring Bars | .160" | .500" | 3/16" |

| | | | |
|---------------------|-------|-------|-------|
| Boring Bars | .160" | .500" | 3/16" |
| Boring Bars | .160" | .500" | 3/16" |
| Radius Boring Tools | .160" | .500" | 3/16" |
| Radius Boring Tools | .160" | .600" | 3/16" |
| Boring Bars | .160" | .600" | 3/16" |
| Boring Bars | .160" | .600" | 3/16" |
| Boring Bars | .160" | .600" | 3/16" |
| Radius Boring Tools | .160" | .600" | 3/16" |
| Radius Boring Tools | .160" | .750" | 3/16" |
| Boring Bars | .160" | .750" | 3/16" |
| Boring Bars | .160" | .750" | 3/16" |
| Boring Bars | .160" | .750" | 3/16" |
| Radius Boring Tools | .160" | .750" | 3/16" |
| Radius Boring Tools | .160" | .900" | 3/16" |
| Boring Bars | .160" | .900" | 3/16" |
| Boring Bars | .160" | .900" | 3/16" |
| Boring Bars | .160" | .900" | 3/16" |
| Radius Boring Tools | .160" | .900" | 3/16" |
| Radius Boring Tools | .180" | 1" | 1/4" |

| | | | |
|---------------------|-------|--------|------|
| Boring Bars | .180" | 1" | 1/4" |
| Boring Bars | .180" | 1" | 1/4" |
| Boring Bars | .180" | 1" | 1/4" |
| Radius Boring Tools | .180" | 1" | 1/4" |
| Radius Boring Tools | .180" | 1.100" | 1/4" |
| Boring Bars | .180" | 1.100" | 1/4" |
| Boring Bars | .180" | 1.100" | 1/4" |
| Radius Boring Tools | .180" | 1.100" | 1/4" |
| Radius Boring Tools | .180" | 1.250" | 1/4" |
| Boring Bars | .180" | 1.250" | 1/4" |
| Boring Bars | .180" | 1.250" | 1/4" |
| Boring Bars | .180" | 1.250" | 1/4" |
| Radius Boring Tools | .180" | 1.250" | 1/4" |
| Radius Boring Tools | .180" | 1.500" | 1/4" |
| Boring Bars | .180" | 1.500" | 1/4" |
| Boring Bars | .180" | 1.500" | 1/4" |
| Boring Bars | .180" | 1.500" | 1/4" |
| Radius Boring Tools | .180" | 1.500" | 1/4" |
| Radius Boring Tools | .180" | .350" | 1/4" |

| | | | |
|---------------------|-------|-------|------|
| Boring Bars | .180" | .350" | 1/4" |
| Boring Bars | .180" | .350" | 1/4" |
| Boring Bars | .180" | .350" | 1/4" |
| Radius Boring Tools | .180" | .350" | 1/4" |
| Radius Boring Tools | .180" | .500" | 1/4" |
| Boring Bars | .180" | .500" | 1/4" |
| Boring Bars | .180" | .500" | 1/4" |
| Boring Bars | .180" | .500" | 1/4" |
| Radius Boring Tools | .180" | .500" | 1/4" |
| Radius Boring Tools | .180" | .600" | 1/4" |
| Boring Bars | .180" | .600" | 1/4" |
| Boring Bars | .180" | .600" | 1/4" |
| Boring Bars | .180" | .600" | 1/4" |
| Radius Boring Tools | .180" | .600" | 1/4" |
| Radius Boring Tools | .180" | .750" | 1/4" |
| Boring Bars | .180" | .750" | 1/4" |
| Boring Bars | .180" | .750" | 1/4" |
| Boring Bars | .180" | .750" | 1/4" |
| Radius Boring Tools | .180" | .750" | 1/4" |

| | | | |
|---------------------|-------|--------|------|
| Radius Boring Tools | .180" | .900" | 1/4" |
| Boring Bars | .180" | .900" | 1/4" |
| Boring Bars | .180" | .900" | 1/4" |
| Boring Bars | .180" | .900" | 1/4" |
| Radius Boring Tools | .180" | .900" | 1/4" |
| Radius Boring Tools | .200" | 1" | 1/4" |
| Boring Bars | .200" | 1" | 1/4" |
| Boring Bars | .200" | 1" | 1/4" |
| Boring Bars | .200" | 1" | 1/4" |
| Radius Boring Tools | .200" | 1" | 1/4" |
| Boring Bars | .200" | 1.100" | 1/4" |
| Boring Bars | .200" | 1.100" | 1/4" |
| Radius Boring Tools | .200" | 1.100" | 1/4" |
| Radius Boring Tools | .200" | 1.200" | 1/4" |
| Boring Bars | .200" | 1.200" | 1/4" |
| Boring Bars | .200" | 1.200" | 1/4" |
| Radius Boring Tools | .200" | 1.200" | 1/4" |
| Radius Boring Tools | .200" | 1.300" | 1/4" |
| Boring Bars | .200" | 1.300" | 1/4" |

| | | | |
|---------------------|-------|--------|------|
| Boring Bars | .200" | 1.300" | 1/4" |
| Radius Boring Tools | .200" | 1.300" | 1/4" |
| Radius Boring Tools | .190" | .400" | 1/4" |
| Boring Bars | .190" | .400" | 1/4" |
| Boring Bars | .200" | .400" | 1/4" |
| Boring Bars | .200" | .400" | 1/4" |
| Radius Boring Tools | .200" | .400" | 1/4" |
| Radius Boring Tools | .200" | .500" | 1/4" |
| Boring Bars | .200" | .500" | 1/4" |
| Boring Bars | .200" | .500" | 1/4" |
| Boring Bars | .200" | .500" | 1/4" |
| Radius Boring Tools | .200" | .500" | 1/4" |
| Radius Boring Tools | .200" | .600" | 1/4" |
| Boring Bars | .200" | .600" | 1/4" |
| Boring Bars | .200" | .600" | 1/4" |
| Boring Bars | .200" | .600" | 1/4" |
| Radius Boring Tools | .200" | .600" | 1/4" |
| Radius Boring Tools | .200" | .700" | 1/4" |
| Boring Bars | .200" | .700" | 1/4" |

| | | | |
|---------------------|-------|--------|-------|
| Boring Bars | .200" | .700" | 1/4" |
| Boring Bars | .200" | .700" | 1/4" |
| Radius Boring Tools | .200" | .700" | 1/4" |
| Radius Boring Tools | .200" | .800" | 1/4" |
| Boring Bars | .200" | .800" | 1/4" |
| Boring Bars | .200" | .800" | 1/4" |
| Radius Boring Tools | .200" | .800" | 1/4" |
| Radius Boring Tools | .200" | .900" | 1/4" |
| Boring Bars | .200" | .900" | 1/4" |
| Boring Bars | .200" | .900" | 1/4" |
| Boring Bars | .200" | .900" | 1/4" |
| Radius Boring Tools | .200" | .900" | 1/4" |
| Radius Boring Tools | .230" | 1" | 3/16" |
| Boring Bars | .230" | 1" | 3/16" |
| Boring Bars | .230" | 1" | 3/16" |
| Boring Bars | .230" | 1" | 3/16" |
| Radius Boring Tools | .230" | 1" | 3/16" |
| Radius Boring Tools | .230" | 1.100" | 3/16" |
| Boring Bars | .230" | 1.100" | 3/16" |

| | | | |
|---------------------|-------|--------|-------|
| Boring Bars | .230" | 1.100" | 3/16" |
| Boring Bars | .230" | 1.100" | 3/16" |
| Radius Boring Tools | .230" | 1.100" | 3/16" |
| Radius Boring Tools | .230" | 1.150" | 3/16" |
| Boring Bars | .230" | 1.150" | 3/16" |
| Boring Bars | .230" | 1.150" | 3/16" |
| Boring Bars | .230" | 1.150" | 3/16" |
| Radius Boring Tools | .230" | 1.150" | 3/16" |
| Radius Boring Tools | .230" | 1.200" | 3/16" |
| Boring Bars | .230" | 1.200" | 3/16" |
| Boring Bars | .230" | 1.200" | 3/16" |
| Boring Bars | .230" | 1.200" | 3/16" |
| Radius Boring Tools | .230" | 1.200" | 3/16" |
| Radius Boring Tools | .230" | 1.250" | 3/16" |
| Boring Bars | .230" | 1.250" | 3/16" |
| Boring Bars | .230" | 1.250" | 3/16" |
| Boring Bars | .230" | 1.250" | 3/16" |
| Radius Boring Tools | .230" | 1.250" | 3/16" |
| Radius Boring Tools | .230" | 1.400" | 3/16" |

| | | | |
|---------------------|-------|--------|-------|
| Boring Bars | .230" | 1.400" | 3/16" |
| Boring Bars | .230" | 1.400" | 3/16" |
| Radius Boring Tools | .230" | 1.400" | 3/16" |
| Radius Boring Tools | .230" | 1.500" | 3/16" |
| Boring Bars | .230" | 1.500" | 3/16" |
| Boring Bars | .230" | 1.500" | 3/16" |
| Boring Bars | .230" | 1.500" | 3/16" |
| Radius Boring Tools | .230" | 1.500" | 3/16" |
| Radius Boring Tools | .230" | 1.600" | 3/16" |
| Boring Bars | .230" | 1.600" | 3/16" |
| Boring Bars | .230" | 1.600" | 3/16" |
| Boring Bars | .230" | 1.600" | 3/16" |
| Radius Boring Tools | .230" | 1.600" | 3/16" |
| Radius Boring Tools | .210" | .400" | 3/16" |
| Boring Bars | .210" | .400" | 3/16" |
| Boring Bars | .230" | .400" | 3/16" |
| Boring Bars | .230" | .400" | 3/16" |
| Radius Boring Tools | .230" | .400" | 3/16" |
| Radius Boring Tools | .230" | .500" | 3/16" |

| | | | |
|---------------------|-------|-------|-------|
| Boring Bars | .230" | .500" | 3/16" |
| Boring Bars | .230" | .500" | 3/16" |
| Boring Bars | .230" | .500" | 3/16" |
| Radius Boring Tools | .230" | .500" | 3/16" |
| Radius Boring Tools | .230" | .600" | 3/16" |
| | | | |
| Boring Bars | .230" | .600" | 3/16" |
| Boring Bars | .230" | .600" | 3/16" |
| Boring Bars | .230" | .600" | 3/16" |
| Radius Boring Tools | .230" | .600" | 3/16" |
| Radius Boring Tools | .230" | .700" | 3/16" |
| Boring Bars | .230" | .700" | 3/16" |
| Boring Bars | .230" | .700" | 3/16" |
| Boring Bars | .230" | .700" | 3/16" |
| Radius Boring Tools | .230" | .700" | 3/16" |
| Radius Boring Tools | .230" | .800" | 3/16" |
| Boring Bars | .230" | .800" | 3/16" |
| Boring Bars | .230" | .800" | 3/16" |
| Boring Bars | .230" | .800" | 3/16" |
| Radius Boring Tools | .230" | .800" | 3/16" |

| | | | |
|---------------------|-------|--------|-------|
| Radius Boring Tools | .230" | .900" | 3/16" |
| Boring Bars | .230" | .900" | 3/16" |
| Boring Bars | .230" | .900" | 3/16" |
| Boring Bars | .230" | .900" | 3/16" |
| Radius Boring Tools | .230" | .900" | 3/16" |
| Radius Boring Tools | .290" | 1" | 3/16" |
| Boring Bars | .290" | 1" | 3/16" |
| Boring Bars | .290" | 1" | 3/16" |
| Boring Bars | .290" | 1" | 3/16" |
| Radius Boring Tools | .290" | 1" | 3/16" |
| Radius Boring Tools | .290" | 1.100" | 3/16" |
| Boring Bars | .290" | 1.100" | 3/16" |
| Boring Bars | .290" | 1.100" | 3/16" |
| Radius Boring Tools | .290" | 1.100" | 3/16" |
| Radius Boring Tools | .290" | 1.250" | 3/16" |
| Boring Bars | .290" | 1.250" | 3/16" |
| Boring Bars | .290" | 1.250" | 3/16" |
| Radius Boring Tools | .290" | 1.250" | 3/16" |
| Radius Boring Tools | .290" | 1.350" | 3/16" |

| | | | |
|---------------------|--------|--------|-------|
| Boring Bars | .290" | 1.350" | 3/16" |
| Boring Bars | .290" | 1.350" | 3/16" |
| Radius Boring Tools | .290" | 1.350" | 3/16" |
| Radius Boring Tools | .290" | 1.500" | 3/16" |
| Boring Bars | .290" | 1.500" | 3/16" |
| Boring Bars | .290" | 1.500" | 3/16" |
| Boring Bars | .290" | 1.500" | 3/16" |
| Radius Boring Tools | .290" | 1.500" | 3/16" |
| Radius Boring Tools | .290" | 1.600" | 3/16" |
| Boring Bars | .290" | 1.600" | 3/16" |
| Boring Bars | .290" | 1.600" | 3/16" |
| Boring Bars | .290" | 1.600" | 3/16" |
| Radius Boring Tools | .290" | 1.600" | 3/16" |
| Radius Boring Tools | .290" | 1.750" | 3/16" |
| Boring Bars | .290" | 1.750" | 3/16" |
| Boring Bars | .290" | 1.750" | 3/16" |
| Boring Bars | .290" | 1.750" | 3/16" |
| Radius Boring Tools | .290" | 1.750" | 3/16" |
| Radius Boring Tools | 17/64" | .500" | 3/16" |

| | | | |
|---------------------|--------|--------|-------|
| Boring Bars | 17/64" | .500" | 3/16" |
| Boring Bars | .290" | .500" | 3/16" |
| Boring Bars | .290" | .500" | 3/16" |
| Radius Boring Tools | .290" | .500" | 3/16" |
| Radius Boring Tools | .290" | .600" | 3/16" |
| Boring Bars | .290" | .600" | 3/16" |
| Boring Bars | .290" | .600" | 3/16" |
| Boring Bars | .290" | .600" | 3/16" |
| Radius Boring Tools | .290" | .600" | 3/16" |
| Radius Boring Tools | .290" | .750" | 3/16" |
| Boring Bars | .290" | .750" | 3/16" |
| Boring Bars | .290" | .750" | 3/16" |
| Boring Bars | .290" | .750" | 3/16" |
| Radius Boring Tools | .290" | .750" | 3/16" |
| Radius Boring Tools | .290" | .900" | 3/16" |
| Boring Bars | .290" | .900" | 3/16" |
| Boring Bars | .290" | .900" | 3/16" |
| Boring Bars | .290" | .900" | 3/16" |
| Radius Boring Tools | .290" | .900" | 3/16" |
| Boring Bars | .320" | 1.800" | 3/8" |

| | | | |
|---------------------|-------|--------|------|
| Boring Bars | .320" | 1.800" | 3/8" |
| Boring Bars | .320" | 1.800" | 3/8" |
| Radius Boring Tools | .320" | 1.800" | 3/8" |
| Radius Boring Tools | .320" | 2" | 3/8" |
| Boring Bars | .320" | 2" | 3/8" |
| Boring Bars | .320" | 2" | 3/8" |
| Boring Bars | .320" | 2" | 3/8" |
| Radius Boring Tools | .320" | 2" | 3/8" |
| Radius Boring Tools | .320" | 2.500" | 3/8" |
| Boring Bars | .320" | 2.500" | 3/8" |
| Boring Bars | .320" | 2.500" | 3/8" |
| Radius Boring Tools | .320" | 2.500" | 3/8" |
| Boring Bars | .320" | 3" | 3/8" |
| Boring Bars | .320" | 3" | 3/8" |
| Boring Bars | .320" | 3" | 3/8" |
| Radius Boring Tools | .320" | 3" | 3/8" |
| Radius Boring Tools | 5/16" | .500" | 3/8" |
| Boring Bars | 5/16" | .500" | 3/8" |
| Boring Bars | .320" | .500" | 3/8" |
| Boring Bars | .320" | .500" | 3/8" |

| | | | |
|---------------------|-------|-------|------|
| Radius Boring Tools | .320" | .500" | 3/8" |
| Radius Boring Tools | .320" | .600" | 3/8" |
| Boring Bars | .320" | .600" | 3/8" |
| Boring Bars | .320" | .600" | 3/8" |
| Boring Bars | .320" | .600" | 3/8" |
| Radius Boring Tools | .320" | .600" | 3/8" |
| Radius Boring Tools | .320" | .750" | 3/8" |
| Boring Bars | .320" | .750" | 3/8" |
| Boring Bars | .320" | .750" | 3/8" |
| Boring Bars | .320" | .750" | 3/8" |
| Radius Boring Tools | .320" | .750" | 3/8" |
| Radius Boring Tools | .320" | .900" | 3/8" |
| Boring Bars | .320" | .900" | 3/8" |
| Boring Bars | .320" | .900" | 3/8" |
| Radius Boring Tools | .320" | .900" | 3/8" |
| Radius Boring Tools | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1" | 3/8" |

| | | | |
|---------------------|-------|--------|------|
| Radius Boring Tools | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1.150" | 3/8" |
| Boring Bars | .360" | 1.150" | 3/8" |
| Boring Bars | .360" | 1.150" | 3/8" |
| Radius Boring Tools | .360" | 1.150" | 3/8" |
| Radius Boring Tools | .360" | 1.250" | 3/8" |
| Boring Bars | .360" | 1.250" | 3/8" |
| Boring Bars | .360" | 1.250" | 3/8" |
| Boring Bars | .360" | 1.250" | 3/8" |
| Radius Boring Tools | .360" | 1.250" | 3/8" |
| Radius Boring Tools | .360" | 1.500" | 3/8" |
| Boring Bars | .360" | 1.500" | 3/8" |
| Boring Bars | .360" | 1.500" | 3/8" |
| Boring Bars | .360" | 1.500" | 3/8" |
| Radius Boring Tools | .360" | 1.500" | 3/8" |
| Radius Boring Tools | .360" | 1.600" | 3/8" |
| Boring Bars | .360" | 1.600" | 3/8" |
| Boring Bars | .360" | 1.600" | 3/8" |
| Boring Bars | .360" | 1.600" | 3/8" |

| | | | |
|---------------------|-------|--------|------|
| Radius Boring Tools | .360" | 1.600" | 3/8" |
| Radius Boring Tools | .360" | 1.800" | 3/8" |
| Boring Bars | .360" | 1.800" | 3/8" |
| Boring Bars | .360" | 1.800" | 3/8" |
| Radius Boring Tools | .360" | 1.800" | 3/8" |
| Radius Boring Tools | .360" | 2" | 3/8" |
| Boring Bars | .360" | 2" | 3/8" |
| Boring Bars | .360" | 2" | 3/8" |
| Boring Bars | .360" | 2" | 3/8" |
| Radius Boring Tools | .360" | 2" | 3/8" |
| Radius Boring Tools | .360" | 2.500" | 3/8" |
| Boring Bars | .360" | 2.500" | 3/8" |
| Boring Bars | .360" | 2.500" | 3/8" |
| Boring Bars | .360" | 2.500" | 3/8" |
| Radius Boring Tools | .360" | 2.500" | 3/8" |
| Radius Boring Tools | .360" | 3" | 3/8" |
| Boring Bars | .360" | 3" | 3/8" |
| Boring Bars | .360" | 3" | 3/8" |
| Radius Boring Tools | .360" | 3" | 3/8" |

| | | | |
|---------------------|-------|-------|------|
| Radius Boring Tools | .325" | .500" | 3/8" |
| Boring Bars | .325" | .500" | 3/8" |
| Boring Bars | .360" | .500" | 3/8" |
| Boring Bars | .360" | .500" | 3/8" |
| Radius Boring Tools | .360" | .500" | 3/8" |
| Radius Boring Tools | .360" | .600" | 3/8" |
| Boring Bars | .360" | .600" | 3/8" |
| Boring Bars | .360" | .600" | 3/8" |
| Boring Bars | .360" | .600" | 3/8" |
| Radius Boring Tools | .360" | .600" | 3/8" |
| Radius Boring Tools | .360" | .750" | 3/8" |
| Boring Bars | .360" | .750" | 3/8" |
| Boring Bars | .360" | .750" | 3/8" |
| Boring Bars | .360" | .750" | 3/8" |
| Radius Boring Tools | .360" | .750" | 3/8" |
| Boring Bars | .360" | .900" | 3/8" |
| Boring Bars | .360" | .900" | 3/8" |
| Radius Boring Tools | .360" | .900" | 3/8" |
| | | | |
| | | | |

| | | | |
|---------------------|-------|--------|------|
| Radius Boring Tools | .490" | 1" | 1/2" |
| Boring Bars | .490" | 1" | 1/2" |
| Boring Bars | .490" | 1" | 1/2" |
| Radius Boring Tools | .490" | 1" | 1/2" |
| Radius Boring Tools | .490" | 1.250" | 1/2" |
| Boring Bars | .490" | 1.250" | 1/2" |
| Boring Bars | .490" | 1.250" | 1/2" |
| Radius Boring Tools | .490" | 1.250" | 1/2" |
| Radius Boring Tools | .490" | 1.500" | 1/2" |
| Boring Bars | .490" | 1.500" | 1/2" |
| Boring Bars | .490" | 1.500" | 1/2" |
| Radius Boring Tools | .490" | 1.500" | 1/2" |
| Radius Boring Tools | .490" | 2" | 1/2" |
| Boring Bars | .490" | 2" | 1/2" |
| Boring Bars | .490" | 2" | 1/2" |
| Boring Bars | .490" | 2" | 1/2" |
| Radius Boring Tools | .490" | 2" | 1/2" |
| Radius Boring Tools | .490" | 2.500" | 1/2" |
| Boring Bars | .490" | 2.500" | 1/2" |

| | | | |
|---------------------|-------|--------|------|
| Boring Bars | .490" | 2.500" | 1/2" |
| Radius Boring Tools | .490" | 2.500" | 1/2" |
| Radius Boring Tools | .490" | 2.750" | 1/2" |
| Boring Bars | .490" | 2.750" | 1/2" |
| Boring Bars | .490" | 2.750" | 1/2" |
| Boring Bars | .490" | 2.750" | 1/2" |
| Radius Boring Tools | .490" | 2.750" | 1/2" |
| Radius Boring Tools | .490" | 3" | 1/2" |
| Boring Bars | .490" | 3" | 1/2" |
| Boring Bars | .490" | 3" | 1/2" |
| Radius Boring Tools | .490" | 3" | 1/2" |
| Radius Boring Tools | .490" | 3.500" | 1/2" |
| Boring Bars | .490" | 3.500" | 1/2" |
| Boring Bars | .490" | 3.500" | 1/2" |
| Boring Bars | .490" | 3.500" | 1/2" |
| Radius Boring Tools | .490" | 3.500" | 1/2" |
| Boring Bars | .490" | 4" | 1/2" |
| Boring Bars | .490" | 4" | 1/2" |
| Radius Boring Tools | .490" | 4" | 1/2" |

| | | | |
|---------------------|-------|--------|------|
| Radius Boring Tools | .490" | 4.500" | 1/2" |
| Boring Bars | .490" | 4.500" | 1/2" |
| Boring Bars | .490" | 4.500" | 1/2" |
| Radius Boring Tools | .490" | 4.500" | 1/2" |
| Boring Bars | .480" | .750" | 1/2" |
| Boring Bars | .490" | .750" | 1/2" |
| Radius Boring Tools | .490" | .750" | 1/2" |



SOLID CARBIDE FACE GROOVING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|-------------|---------------------|---------------------------|-----------------------|
|-------------|---------------------|---------------------------|-----------------------|

| | | | |
|----------------|--------|-------|-------|
| Grooving Tools | 17/64" | .050" | 1/4" |
| Grooving Tools | 17/64" | .050" | 1/4" |
| Grooving Tools | 17/64" | .050" | 1/4" |
| Grooving Tools | 17/64" | .050" | 1/4" |
| Grooving Tools | 17/64" | .050" | 1/4" |
| Grooving Tools | 17/64" | .050" | 1/4" |
| Grooving Tools | 17/64" | .050" | 1/4" |
| Grooving Tools | 17/64" | .050" | 1/4" |
| Grooving Tools | .320" | .050" | 3/16" |
| Grooving Tools | .320" | .050" | 3/16" |
| Grooving Tools | .320" | .050" | 3/16" |
| Grooving Tools | .320" | .050" | 3/16" |
| Grooving Tools | .320" | .075" | 3/16" |
| Grooving Tools | .320" | .075" | 3/16" |
| Grooving Tools | .320" | .075" | 3/16" |
| Grooving Tools | .320" | .075" | 3/16" |
| Grooving Tools | .385" | .050" | 3/8" |
| Grooving Tools | .385" | .050" | 3/8" |
| Grooving Tools | .385" | .075" | 3/8" |
| Grooving Tools | .385" | .075" | 3/8" |
| Grooving Tools | .385" | .100" | 3/8" |

| | | | |
|----------------|-------|-------|------|
| Grooving Tools | .385" | .100" | 3/8" |
| Grooving Tools | .385" | .100" | 3/8" |
| Grooving Tools | .385" | .100" | 3/8" |
| Grooving Tools | .510" | .075" | 1/2" |
| Grooving Tools | .510" | .075" | 1/2" |
| Grooving Tools | .510" | .100" | 1/2" |
| Grooving Tools | .510" | .100" | 1/2" |
| Grooving Tools | .510" | .100" | 1/2" |
| Grooving Tools | .510" | .100" | 1/2" |
| Grooving Tools | .510" | .100" | 1/2" |
| Grooving Tools | .510" | .075" | 5/8" |
| Grooving Tools | 5/8" | .075" | 5/8" |
| Grooving Tools | .635" | .100" | 5/8" |
| Grooving Tools | .635" | .100" | 5/8" |
| Grooving Tools | .635" | .100" | 5/8" |
| Grooving Tools | .635" | .100" | 5/8" |
| Grooving Tools | .635" | .150" | 5/8" |
| Grooving Tools | .635" | .150" | 5/8" |
| Grooving Tools | .635" | .100" | 3/4" |
| Grooving Tools | .635" | .100" | 3/4" |

| | | | |
|----------------|-------|-------|------|
| Grooving Tools | .760" | .100" | 3/4" |
| Grooving Tools | .760" | .100" | 3/4" |
| Grooving Tools | .760" | .150" | 3/4" |
| Grooving Tools | .760" | .150" | 3/4" |
| Grooving Tools | .760" | .200" | 3/4" |
| Grooving Tools | .760" | .200" | 3/4" |



SOLID CARBIDE FULL RADIUS GROOVING TOOLS

| <u>TYPE</u> | <u>MINIMUM</u> <u>BORE</u> | <u>MAXIMUM</u> <u>BORE</u> <u>DEPTH</u> | <u>SHANK</u> <u>DIAMETER</u> |
|----------------|-------------------------------|---|---------------------------------|
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | .245" | .250" | 1/4" |
| Grooving Tools | 1/4" | .375" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .375" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .375" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 5/16" | .625" | 5/16" |
| Grooving Tools | .310" | .250" | 5/16" |
| Grooving Tools | 5/16" | .375" | 5/16" |
| Grooving Tools | 5/16" | .375" | 5/16" |
| Grooving Tools | 5/16" | .500" | 5/16" |
| Grooving Tools | 5/16" | .500" | 5/16" |

| | | | |
|----------------|-------|--------|-------|
| Grooving Tools | 5/16" | .625" | 5/16" |
| Grooving Tools | 5/16" | .250" | 5/16" |
| Grooving Tools | 5/16" | .375" | 5/16" |
| Grooving Tools | 5/16" | .500" | 5/16" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | .370" | .250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |

| | | | |
|----------------|------|--------|------|
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |

| | | | |
|----------------|------|--------|------|
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 1/2" |
| Grooving Tools | 3/8" | .750" | 1/2" |
| Grooving Tools | 3/8" | 1" | 1/2" |
| Grooving Tools | 3/8" | 1" | 1/2" |
| Grooving Tools | 3/8" | 1.250" | 1/2" |
| Grooving Tools | 3/8" | 1.250" | 1/2" |
| Grooving Tools | 3/8" | 1.500" | 1/2" |
| Grooving Tools | 3/8" | .500" | 1/2" |
| Grooving Tools | 3/8" | .500" | 1/2" |
| Grooving Tools | 1/2" | .750" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1.250" | 1/2" |
| Grooving Tools | 1/2" | 1.250" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | .495" | .500" | 1/2" |
| Grooving Tools | 1/2" | .750" | 1/2" |
| Grooving Tools | 1/2" | .750" | 1/2" |

| | | | |
|----------------|------|--------|------|
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1.250" | 1/2" |
| Grooving Tools | 1/2" | 1.250" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | 1/2" | .500" | 1/2" |
| Grooving Tools | 1/2" | .500" | 1/2" |



SOLID CARBIDE HELICAL BACK RAKE BORING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|-------------|---------------------|---------------------------|-----------------------|
|-------------|---------------------|---------------------------|-----------------------|

| | | | |
|-------------|-------|-------|------|
| Boring Bars | .020" | .062" | 1/8" |
| Boring Bars | .020" | .062" | 1/8" |
| Boring Bars | .020" | .062" | 1/8" |
| Boring Bars | .020" | .062" | 1/8" |
| Boring Bars | .025" | .125" | 1/8" |
| Boring Bars | .025" | .125" | 1/8" |
| Boring Bars | .025" | .125" | 1/8" |
| Boring Bars | .025" | .125" | 1/8" |
| Boring Bars | .030" | .187" | 1/8" |
| Boring Bars | .030" | .187" | 1/8" |
| Boring Bars | .030" | .125" | 1/8" |
| Boring Bars | .030" | .125" | 1/8" |
| Boring Bars | .035" | .187" | 1/8" |
| Boring Bars | .035" | .187" | 1/8" |
| Boring Bars | .035" | .187" | 1/8" |
| Boring Bars | .035" | .187" | 1/8" |
| Boring Bars | .040" | .250" | 1/8" |
| Boring Bars | .040" | .250" | 1/8" |
| Boring Bars | .050" | .312" | 1/8" |
| Boring Bars | .050" | .312" | 1/8" |
| Boring Bars | .060" | .375" | 1/8" |

| | | | |
|-------------|-------|--------|-------|
| Boring Bars | .060" | .375" | 1/8" |
| Boring Bars | .070" | .437" | 1/8" |
| Boring Bars | .070" | .437" | 1/8" |
| Boring Bars | .080" | .500" | 1/8" |
| Boring Bars | .080" | .500" | 1/8" |
| Boring Bars | .080" | .500" | 1/8" |
| Boring Bars | .080" | .500" | 1/8" |
| Boring Bars | .100" | .562" | 1/8" |
| Boring Bars | .100" | .562" | 1/8" |
| Boring Bars | .120" | 1" | 1/8" |
| Boring Bars | .120" | 1" | 1/8" |
| Boring Bars | .120" | .625" | 1/8" |
| Boring Bars | .120" | .625" | 1/8" |
| Boring Bars | .135" | 1" | 3/16" |
| Boring Bars | .135" | 1" | 3/16" |
| Boring Bars | .120" | .750" | 3/16" |
| Boring Bars | .120" | .750" | 3/16" |
| Boring Bars | .150" | 1" | 3/16" |
| Boring Bars | .150" | 1" | 3/16" |
| Boring Bars | .150" | 1.250" | 3/16" |
| Boring Bars | .150" | 1.250" | 3/16" |

| | | | |
|-------------|-------|--------|-------|
| Boring Bars | .180" | 1" | 3/16" |
| Boring Bars | .180" | 1" | 3/16" |
| Boring Bars | .180" | 1.250" | 3/16" |
| Boring Bars | .180" | 1.250" | 3/16" |
| Boring Bars | .180" | 1.500" | 3/16" |
| Boring Bars | .180" | 1.500" | 3/16" |
| Boring Bars | .200" | 1" | 1/4" |
| Boring Bars | .200" | 1" | 1/4" |
| Boring Bars | .210" | 1.250" | 1/4" |
| Boring Bars | .210" | 1.250" | 1/4" |
| Boring Bars | .210" | 1.500" | 1/4" |
| Boring Bars | .210" | 1.500" | 1/4" |
| Boring Bars | .230" | 1" | 1/4" |
| Boring Bars | .230" | 1" | 1/4" |
| Boring Bars | .240" | 1.500" | 1/4" |
| Boring Bars | .240" | 1.500" | 1/4" |
| Boring Bars | .240" | 1.750" | 1/4" |
| Boring Bars | .240" | 1.750" | 1/4" |
| Boring Bars | .300" | 1" | 3/16" |
| Boring Bars | .300" | 1" | 3/16" |
| Boring Bars | .300" | 1.500" | 3/16" |

| | | | |
|-------------|-------|--------|-------|
| Boring Bars | .300" | 1.500" | 3/16" |
| Boring Bars | .300" | 1.750" | 3/16" |
| Boring Bars | .300" | 1.750" | 3/16" |
| Boring Bars | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1.500" | 3/8" |
| Boring Bars | .360" | 1.500" | 3/8" |
| Boring Bars | .360" | 2" | 3/8" |
| Boring Bars | .360" | 2" | 3/8" |
| Boring Bars | .360" | 2.500" | 3/8" |
| Boring Bars | .360" | 2.500" | 3/8" |



SOLID CARBIDE "O" RING GROOVING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|----------------|-------------------------|-----------------------------------|---------------------------|
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .5625" | 1/4" |
| Grooving Tools | 1/4" | .5625" | 1/4" |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .8125" | 3/8" |
| Grooving Tools | 3/8" | .8125" | 3/8" |
| Grooving Tools | 3/8" | .9375" | 3/8" |
| Grooving Tools | 3/8" | .9375" | 3/8" |



SOLID CARBIDE QUICK CHANGE BORING TOOLS

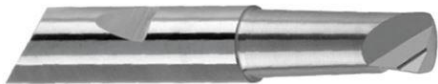
| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|-------------|---------------------|---------------------------|-----------------------|
| Boring Bars | .050" | .150" | 3/16" |
| Boring Bars | .050" | .200" | 3/16" |
| Boring Bars | .050" | .300" | 3/16" |
| Boring Bars | .050" | .400" | 3/16" |
| Boring Bars | .060" | .150" | 3/16" |
| Boring Bars | .060" | .200" | 3/16" |
| Boring Bars | .060" | .300" | 3/16" |
| Boring Bars | .060" | .400" | 3/16" |
| Boring Bars | .060" | .500" | 3/16" |
| Boring Bars | .080" | .200" | 3/16" |
| Boring Bars | .080" | .300" | 3/16" |
| Boring Bars | .080" | .500" | 3/16" |

| | | | |
|-------------|-------|-------|-------|
| Boring Bars | .080" | .600" | 3/16" |
| Boring Bars | .100" | .200" | 3/16" |
| Boring Bars | .100" | .300" | 3/16" |
| Boring Bars | .100" | .500" | 3/16" |
| Boring Bars | .100" | .700" | 3/16" |
| Boring Bars | 7/64" | .300" | 3/16" |
| Boring Bars | 7/64" | .500" | 3/16" |
| Boring Bars | 7/64" | .700" | 3/16" |
| Boring Bars | .120" | .250" | 3/16" |
| Boring Bars | .120" | .350" | 3/16" |
| Boring Bars | .120" | .500" | 3/16" |
| Boring Bars | .120" | .700" | 3/16" |
| Boring Bars | .120" | .800" | 3/16" |
| Boring Bars | .140" | .400" | 3/16" |
| Boring Bars | .140" | .600" | 3/16" |
| Boring Bars | .140" | .800" | 3/16" |
| Boring Bars | .160" | 1" | 3/16" |
| Boring Bars | .160" | .400" | 3/16" |
| Boring Bars | .160" | .600" | 3/16" |
| Boring Bars | .160" | .750" | 3/16" |
| Boring Bars | .180" | 1" | 1/4" |

| | | | |
|-------------|-------|--------|-------|
| Boring Bars | .180" | 1.250" | 1/4" |
| Boring Bars | .180" | 1.500" | 1/4" |
| Boring Bars | .180" | .500" | 1/4" |
| Boring Bars | .180" | .750" | 1/4" |
| Boring Bars | .200" | 1" | 1/4" |
| Boring Bars | .200" | 1.200" | 1/4" |
| Boring Bars | .200" | 1.500" | 1/4" |
| Boring Bars | .200" | .500" | 1/4" |
| Boring Bars | .200" | .750" | 1/4" |
| Boring Bars | .230" | 1" | 3/16" |
| Boring Bars | .230" | 1.250" | 3/16" |
| Boring Bars | .230" | 1.500" | 3/16" |
| Boring Bars | .230" | 1.600" | 3/16" |
| Boring Bars | .230" | .500" | 3/16" |
| Boring Bars | .230" | .750" | 3/16" |
| Boring Bars | .290" | 1" | 3/16" |
| Boring Bars | .290" | 1.250" | 3/16" |
| Boring Bars | .290" | 1.500" | 3/16" |
| Boring Bars | .290" | 1.750" | 3/16" |
| Boring Bars | .290" | .500" | 3/16" |
| Boring Bars | .290" | .750" | 3/16" |

| | | | |
|-------------|-------|--------|------|
| Boring Bars | .320" | 1" | 3/8" |
| Boring Bars | .320" | 1.250" | 3/8" |
| Boring Bars | .320" | 1.500" | 3/8" |
| Boring Bars | .320" | 1.800" | 3/8" |
| Boring Bars | .320" | 2" | 3/8" |
| Boring Bars | .320" | 2.500" | 3/8" |
| Boring Bars | .320" | .500" | 3/8" |
| Boring Bars | .320" | .750" | 3/8" |
| Boring Bars | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1.250" | 3/8" |
| Boring Bars | .360" | 1.500" | 3/8" |
| Boring Bars | .360" | 1.800" | 3/8" |
| Boring Bars | .360" | 2" | 3/8" |
| Boring Bars | .360" | 2.500" | 3/8" |
| Boring Bars | .360" | .750" | 3/8" |
| Boring Bars | .460" | 1" | 1/2" |
| Boring Bars | .460" | 1.250" | 1/2" |
| Boring Bars | .460" | 1.500" | 1/2" |
| Boring Bars | .460" | 2" | 1/2" |
| Boring Bars | .460" | 2.500" | 1/2" |
| Boring Bars | .460" | 3" | 1/2" |

| | | | |
|-------------|-------|--------|------|
| Boring Bars | .490" | 1" | 1/2" |
| Boring Bars | .490" | 1.250" | 1/2" |
| Boring Bars | .490" | 1.500" | 1/2" |
| Boring Bars | .490" | 2" | 1/2" |
| Boring Bars | .490" | 2.500" | 1/2" |
| Boring Bars | .490" | 3" | 1/2" |



SOLID CARBIDE QUICK CHANGE BORING TOOLS FOR MILLING MACHINES

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|-------------|---------------------|---------------------------|-----------------------|
| Boring Bars | 7/64" | .500" | 1/4" |

| | | | |
|-------------|-------|--------|------|
| Boring Bars | 7/64" | .500" | 1/4" |
| Boring Bars | 7/64" | .750" | 1/4" |
| Boring Bars | 7/64" | .750" | 1/4" |
| Boring Bars | 9/64" | .500" | 1/4" |
| Boring Bars | 9/64" | .500" | 1/4" |
| Boring Bars | .150" | .750" | 1/4" |
| Boring Bars | .150" | .750" | 1/4" |
| Boring Bars | .200" | 1.250" | 1/4" |
| Boring Bars | .200" | 1.250" | 1/4" |
| Boring Bars | .200" | .500" | 1/4" |
| Boring Bars | .200" | .500" | 1/4" |
| Boring Bars | .200" | .750" | 1/4" |
| Boring Bars | .200" | .750" | 1/4" |
| Boring Bars | .230" | 1.250" | 1/4" |
| Boring Bars | .230" | 1.250" | 1/4" |
| Boring Bars | .230" | 1.500" | 1/4" |
| Boring Bars | .230" | 1.500" | 1/4" |
| Boring Bars | .230" | .750" | 1/4" |
| Boring Bars | .230" | .750" | 1/4" |
| Boring Bars | .300" | 1" | 3/8" |
| Boring Bars | .300" | 1" | 3/8" |

| | | | |
|-------------|-------|--------|------|
| Boring Bars | .300" | 1.500" | 3/8" |
| Boring Bars | .300" | 1.500" | 3/8" |
| Boring Bars | .300" | 1.750" | 3/8" |
| Boring Bars | .300" | 1.750" | 3/8" |
| Boring Bars | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1.500" | 3/8" |
| Boring Bars | .360" | 1.500" | 3/8" |
| Boring Bars | .360" | 2" | 3/8" |
| Boring Bars | .360" | 2" | 3/8" |
| Boring Bars | .460" | 1" | 1/2" |
| Boring Bars | .460" | 1" | 1/2" |
| Boring Bars | .460" | 1.500" | 1/2" |
| Boring Bars | .460" | 1.500" | 1/2" |
| Boring Bars | .460" | 2" | 1/2" |
| Boring Bars | .460" | 2" | 1/2" |
| Boring Bars | .460" | 2.500" | 1/2" |
| Boring Bars | .460" | 2.500" | 1/2" |
| Boring Bars | .460" | 3" | 1/2" |
| Boring Bars | .460" | 3" | 1/2" |



SOLID CARBIDE QUICK CHANGE BORING TOOLS WITH TOP RAKE CHIPBREAKER

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|-------------|---------------------|---------------------------|-----------------------|
| Boring Bars | .050" | .200" | 3/16" |
| Boring Bars | .050" | .200" | 3/16" |
| Boring Bars | .050" | .400" | 3/16" |
| Boring Bars | .050" | .400" | 3/16" |
| Boring Bars | .050" | .500" | 3/16" |
| Boring Bars | .050" | .500" | 3/16" |
| Boring Bars | .060" | .200" | 3/16" |
| Boring Bars | .060" | .200" | 3/16" |
| Boring Bars | .060" | .400" | 3/16" |

| | | | |
|-------------|-------|-------|-------|
| Boring Bars | .060" | .400" | 3/16" |
| Boring Bars | .060" | .500" | 3/16" |
| Boring Bars | .060" | .500" | 3/16" |
| Boring Bars | .060" | .200" | 3/16" |
| Boring Bars | .060" | .200" | 3/16" |
| Boring Bars | .070" | .400" | 3/16" |
| Boring Bars | .070" | .400" | 3/16" |
| Boring Bars | .070" | .600" | 3/16" |
| Boring Bars | .070" | .600" | 3/16" |
| Boring Bars | 7/64" | .250" | 3/16" |
| Boring Bars | 7/64" | .250" | 3/16" |
| Boring Bars | 7/64" | .500" | 3/16" |
| Boring Bars | 7/64" | .500" | 3/16" |
| Boring Bars | 7/64" | .750" | 3/16" |
| Boring Bars | 7/64" | .750" | 3/16" |
| Boring Bars | .120" | 1" | 3/16" |
| Boring Bars | .120" | 1" | 3/16" |
| Boring Bars | .120" | .250" | 3/16" |
| Boring Bars | .120" | .250" | 3/16" |
| Boring Bars | .120" | .500" | 3/16" |
| Boring Bars | .120" | .500" | 3/16" |

| | | | |
|-------------|-------|--------|-------|
| Boring Bars | .120" | .750" | 3/16" |
| Boring Bars | .120" | .750" | 3/16" |
| Boring Bars | .160" | 1" | 3/16" |
| Boring Bars | .160" | 1" | 3/16" |
| Boring Bars | .160" | 1.250" | 3/16" |
| Boring Bars | .160" | 1.250" | 3/16" |
| Boring Bars | .160" | .500" | 3/16" |
| Boring Bars | .160" | .500" | 3/16" |
| Boring Bars | .160" | .750" | 3/16" |
| Boring Bars | .160" | .750" | 3/16" |
| Boring Bars | .180" | 1" | 1/4" |
| Boring Bars | .180" | 1" | 1/4" |
| Boring Bars | .180" | 1.250" | 1/4" |
| Boring Bars | .180" | 1.250" | 1/4" |
| Boring Bars | .180" | 1.500" | 1/4" |
| Boring Bars | .180" | 1.500" | 1/4" |
| Boring Bars | .180" | .500" | 1/4" |
| Boring Bars | .180" | .500" | 1/4" |
| Boring Bars | .180" | .750" | 1/4" |
| Boring Bars | .180" | .750" | 1/4" |
| Boring Bars | .200" | 1" | 1/4" |

| | | | |
|-------------|-------|--------|-------|
| Boring Bars | .200" | 1" | 1/4" |
| Boring Bars | .200" | 1.250" | 1/4" |
| Boring Bars | .200" | 1.250" | 1/4" |
| Boring Bars | .200" | 1.500" | 1/4" |
| Boring Bars | .200" | 1.500" | 1/4" |
| Boring Bars | .200" | .600" | 1/4" |
| Boring Bars | .200" | .600" | 1/4" |
| Boring Bars | .230" | 1.100" | 3/16" |
| Boring Bars | .230" | 1.100" | 3/16" |
| Boring Bars | .230" | 1.300" | 3/16" |
| Boring Bars | .230" | 1.300" | 3/16" |
| Boring Bars | .230" | 1.600" | 3/16" |
| Boring Bars | .230" | 1.600" | 3/16" |
| Boring Bars | .230" | .750" | 3/16" |
| Boring Bars | .230" | .750" | 3/16" |
| Boring Bars | .300" | 1" | 3/8" |
| Boring Bars | .300" | 1" | 3/8" |
| Boring Bars | .300" | 1.600" | 3/8" |
| Boring Bars | .300" | 1.600" | 3/8" |
| Boring Bars | .300" | 2.100" | 3/8" |
| Boring Bars | .300" | 2.100" | 3/8" |

| | | | |
|-------------|-------|--------|------|
| Boring Bars | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1.600" | 3/8" |
| Boring Bars | .360" | 1.600" | 3/8" |
| Boring Bars | .360" | 2.100" | 3/8" |
| Boring Bars | .360" | 2.100" | 3/8" |
| Boring Bars | .460" | 1" | 1/2" |
| Boring Bars | .460" | 1" | 1/2" |
| Boring Bars | .460" | 1.600" | 1/2" |
| Boring Bars | .460" | 1.600" | 1/2" |
| Boring Bars | .460" | 2.100" | 1/2" |
| Boring Bars | .460" | 2.100" | 1/2" |
| Boring Bars | .490" | 1" | 1/2" |
| Boring Bars | .490" | 1" | 1/2" |
| Boring Bars | .490" | 1.600" | 1/2" |
| Boring Bars | .490" | 1.600" | 1/2" |
| Boring Bars | .490" | 2.100" | 1/2" |
| Boring Bars | .490" | 2.100" | 1/2" |



SOLID CARBIDE QUICK CHANGE FACE GROOVING TOOLS

| TYPE | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|----------------|---------------------|---------------------------|-----------------------|
| Grooving Tools | .180" | .050" | 3/16" |
| Grooving Tools | .180" | .050" | 3/16" |
| Grooving Tools | .190" | .050" | 3/16" |
| Grooving Tools | .190" | .050" | 3/16" |
| Grooving Tools | .240" | .050" | 1/4" |
| Grooving Tools | .240" | .050" | 1/4" |
| Grooving Tools | .240" | .050" | 1/4" |
| Grooving Tools | .240" | .050" | 1/4" |
| Grooving Tools | 17/64" | .050" | 1/4" |
| Grooving Tools | 17/64" | .050" | 1/4" |
| Grooving Tools | 17/64" | .050" | 1/4" |

| | | | |
|----------------|--------|-------|-------|
| Grooving Tools | 17/64" | .050" | 1/4" |
| Grooving Tools | .320" | .050" | 3/16" |
| Grooving Tools | .320" | .050" | 3/16" |
| Grooving Tools | .322" | .050" | 3/16" |
| Grooving Tools | .322" | .050" | 3/16" |
| Grooving Tools | .322" | .100" | 3/16" |
| Grooving Tools | .322" | .100" | 3/16" |
| Grooving Tools | .385" | .100" | 3/8" |
| Grooving Tools | .385" | .100" | 3/8" |
| Grooving Tools | .385" | .100" | 3/8" |
| Grooving Tools | .385" | .100" | 3/8" |
| Grooving Tools | .385" | .100" | 3/8" |
| Grooving Tools | .385" | .100" | 3/8" |
| Grooving Tools | .385" | .150" | 3/8" |
| Grooving Tools | .385" | .150" | 3/8" |
| Grooving Tools | .385" | .150" | 3/8" |
| Grooving Tools | .385" | .150" | 3/8" |
| Grooving Tools | .460" | .100" | 1/2" |
| Grooving Tools | .463" | .100" | 1/2" |
| Grooving Tools | .480" | .100" | 1/2" |
| Grooving Tools | .480" | .100" | 1/2" |

| | | | |
|----------------|-------|-------|------|
| Grooving Tools | .480" | .100" | 1/2" |
| Grooving Tools | .480" | .100" | 1/2" |
| Grooving Tools | .480" | .150" | 1/2" |
| Grooving Tools | .480" | .150" | 1/2" |
| Grooving Tools | .480" | .150" | 1/2" |
| Grooving Tools | .480" | .150" | 1/2" |
| Grooving Tools | .480" | .150" | 1/2" |
| Grooving Tools | .480" | .150" | 1/2" |
| Grooving Tools | 1/2" | .100" | 1/2" |
| Grooving Tools | 1/2" | .100" | 1/2" |
| Grooving Tools | 1/2" | .100" | 1/2" |
| Grooving Tools | 1/2" | .100" | 1/2" |
| Grooving Tools | 1/2" | .100" | 1/2" |
| Grooving Tools | 1/2" | .150" | 1/2" |
| Grooving Tools | 1/2" | .150" | 1/2" |
| Grooving Tools | 1/2" | .150" | 1/2" |
| Grooving Tools | 1/2" | .150" | 1/2" |
| Grooving Tools | 1/2" | .150" | 1/2" |
| Grooving Tools | 1/2" | .150" | 1/2" |



SOLID CARBIDE QUICK CHANGE FULL RADIUS GROOVING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|----------------|---------------------|---------------------------|-----------------------|
| Grooving Tools | .180" | .625" | 3/16" |
| Grooving Tools | .180" | .625" | 3/16" |
| Grooving Tools | .160" | .250" | 3/16" |
| Grooving Tools | .160" | .250" | 3/16" |
| Grooving Tools | .180" | .375" | 3/16" |
| Grooving Tools | .180" | .375" | 3/16" |
| Grooving Tools | .180" | .500" | 3/16" |
| Grooving Tools | .180" | .500" | 3/16" |
| Grooving Tools | .180" | .625" | 3/16" |

| | | | |
|----------------|-------|-------|-------|
| Grooving Tools | .180" | .625" | 3/16" |
| Grooving Tools | .180" | .250" | 3/16" |
| Grooving Tools | .180" | .250" | 3/16" |
| Grooving Tools | .180" | .375" | 3/16" |
| Grooving Tools | .180" | .375" | 3/16" |
| Grooving Tools | .180" | .500" | 3/16" |
| Grooving Tools | .180" | .500" | 3/16" |
| Grooving Tools | .245" | .625" | 1/4" |
| Grooving Tools | .245" | .625" | 1/4" |
| Grooving Tools | .240" | .250" | 1/4" |
| Grooving Tools | .240" | .250" | 1/4" |
| Grooving Tools | .245" | .375" | 1/4" |
| Grooving Tools | .245" | .375" | 1/4" |
| Grooving Tools | .245" | .500" | 1/4" |
| Grooving Tools | .245" | .500" | 1/4" |
| Grooving Tools | .245" | .625" | 1/4" |
| Grooving Tools | .245" | .625" | 1/4" |
| Grooving Tools | .245" | .250" | 1/4" |
| Grooving Tools | .245" | .250" | 1/4" |
| Grooving Tools | .245" | .375" | 1/4" |
| Grooving Tools | .245" | .375" | 1/4" |

| | | | |
|----------------|-------|--------|-------|
| Grooving Tools | .245" | .500" | 1/4" |
| Grooving Tools | .310" | .500" | 1/4" |
| Grooving Tools | .310" | .750" | 3/16" |
| Grooving Tools | .310" | .750" | 3/16" |
| Grooving Tools | .300" | .375" | 3/16" |
| Grooving Tools | .300" | .375" | 3/16" |
| Grooving Tools | .310" | .500" | 3/16" |
| Grooving Tools | .310" | .500" | 3/16" |
| Grooving Tools | .310" | .750" | 3/16" |
| Grooving Tools | .310" | .750" | 3/16" |
| Grooving Tools | .310" | .375" | 3/16" |
| Grooving Tools | .310" | .375" | 3/16" |
| Grooving Tools | .310" | .500" | 3/16" |
| Grooving Tools | .310" | .500" | 3/16" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .360" | .500" | 3/8" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | .360" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .490" | .750" | 1/2" |
| Grooving Tools | .490" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |



SOLID CARBIDE QUICK CHANGE BORING AND PROFILING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|--------------------------|---------------------|---------------------------|-----------------------|
| Boring & Profiling Tools | .050" | .200" | 3/16" |
| Boring & Profiling Tools | .050" | .200" | 3/16" |
| Boring & Profiling Tools | .050" | .400" | 3/16" |
| Boring & Profiling Tools | .050" | .400" | 3/16" |
| Boring & Profiling Tools | .050" | .500" | 3/16" |
| Boring & Profiling Tools | .050" | .500" | 3/16" |
| Boring & Profiling Tools | .060" | .200" | 3/16" |

| | | | |
|--------------------------|-------|-------|-------|
| Boring & Profiling Tools | .060" | .200" | 3/16" |
| Boring & Profiling Tools | .060" | .400" | 3/16" |
| Boring & Profiling Tools | .060" | .400" | 3/16" |
| Boring & Profiling Tools | .060" | .500" | 3/16" |
| Boring & Profiling Tools | .060" | .500" | 3/16" |
| Boring & Profiling Tools | .070" | .200" | 3/16" |
| Boring & Profiling Tools | .070" | .200" | 3/16" |
| Boring & Profiling Tools | .070" | .400" | 3/16" |
| Boring & Profiling Tools | .070" | .400" | 3/16" |
| Boring & Profiling Tools | .070" | .500" | 3/16" |
| Boring & Profiling Tools | .070" | .500" | 3/16" |
| Boring & Profiling Tools | .070" | .600" | 3/16" |
| Boring & Profiling Tools | .070" | .600" | 3/16" |
| Boring & Profiling Tools | 7/64" | .250" | 3/16" |

| | | | |
|--------------------------|-------|-------|-------|
| Boring & Profiling Tools | 7/64" | .250" | 3/16" |
| Boring & Profiling Tools | 7/64" | .500" | 3/16" |
| Boring & Profiling Tools | 7/64" | .500" | 3/16" |
| Boring & Profiling Tools | 7/64" | .750" | 3/16" |
| Boring & Profiling Tools | 7/64" | .750" | 3/16" |
| Boring & Profiling Tools | .120" | 1" | 3/16" |
| Boring & Profiling Tools | .120" | 1" | 3/16" |
| Boring & Profiling Tools | .120" | .250" | 3/16" |
| Boring & Profiling Tools | .120" | .250" | 3/16" |
| Boring & Profiling Tools | .120" | .500" | 3/16" |
| Boring & Profiling Tools | .120" | .500" | 3/16" |
| Boring & Profiling Tools | .120" | .750" | 3/16" |
| Boring & Profiling Tools | .120" | .750" | 3/16" |
| Boring & Profiling Tools | .160" | 1" | 3/16" |

| | | | |
|--------------------------|-------|-------|-------|
| Boring & Profiling Tools | .160" | 1" | 3/16" |
| Boring & Profiling Tools | .160" | .500" | 3/16" |
| Boring & Profiling Tools | .160" | .500" | 3/16" |
| Boring & Profiling Tools | .160" | .750" | 3/16" |
| Boring & Profiling Tools | .160" | .750" | 3/16" |
| Boring & Profiling Tools | .180" | 1" | 1/4" |
| Boring & Profiling Tools | .180" | 1" | 1/4" |
| Boring & Profiling Tools | .180" | .500" | 1/4" |
| Boring & Profiling Tools | .180" | .500" | 1/4" |
| Boring & Profiling Tools | .180" | .750" | 1/4" |
| Boring & Profiling Tools | .180" | .750" | 1/4" |
| Boring & Profiling Tools | .200" | 1" | 1/4" |
| Boring & Profiling Tools | .200" | 1" | 1/4" |
| Boring & Profiling Tools | .200" | .600" | 1/4" |

| | | | |
|--------------------------|-------|--------|-------|
| Boring & Profiling Tools | .200" | .600" | 1/4" |
| Boring & Profiling Tools | .230" | 1" | 3/16" |
| Boring & Profiling Tools | .230" | 1" | 3/16" |
| Boring & Profiling Tools | .230" | 1.100" | 3/16" |
| Boring & Profiling Tools | .230" | 1.100" | 3/16" |
| Boring & Profiling Tools | .230" | 1.250" | 3/16" |
| Boring & Profiling Tools | .230" | 1.250" | 3/16" |
| Boring & Profiling Tools | .230" | .750" | 3/16" |
| Boring & Profiling Tools | .230" | .750" | 3/16" |
| Boring & Profiling Tools | .300" | 1" | 3/16" |
| Boring & Profiling Tools | .300" | 1" | 3/16" |
| Boring & Profiling Tools | .300" | 1.250" | 3/16" |
| Boring & Profiling Tools | .300" | 1.250" | 3/16" |
| Boring & Profiling Tools | .360" | 1" | 3/8" |

| | | | |
|--------------------------|-------|--------|------|
| Boring & Profiling Tools | .360" | 1" | 3/8" |
| Boring & Profiling Tools | .360" | 1.250" | 3/8" |
| Boring & Profiling Tools | .360" | 1.250" | 3/8" |
| Boring & Profiling Tools | .460" | 1" | 1/2" |
| Boring & Profiling Tools | .460" | 1" | 1/2" |



SOLID CARBIDE QUICK CHANGE REVERSE BORING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|-------------|---------------------|---------------------------|-----------------------|
| Boring Bars | 5/32" | 1" | 3/16" |
| Boring Bars | 5/32" | 1" | 3/16" |
| Boring Bars | .150" | .500" | 3/16" |

| | | | |
|-------------|-------|--------|-------|
| Boring Bars | .150" | .500" | 3/16" |
| Boring Bars | 5/32" | .750" | 3/16" |
| Boring Bars | 5/32" | .750" | 3/16" |
| Boring Bars | .180" | 1" | 1/4" |
| Boring Bars | .180" | 1" | 1/4" |
| Boring Bars | .180" | .500" | 1/4" |
| Boring Bars | .180" | .500" | 1/4" |
| Boring Bars | .180" | .750" | 1/4" |
| Boring Bars | .180" | .750" | 1/4" |
| Boring Bars | .200" | 1" | 1/4" |
| Boring Bars | .200" | 1" | 1/4" |
| Boring Bars | .200" | 1.250" | 1/4" |
| Boring Bars | .200" | 1.250" | 1/4" |
| Boring Bars | .200" | .500" | 1/4" |
| Boring Bars | .200" | .500" | 1/4" |
| Boring Bars | .200" | .750" | 1/4" |
| Boring Bars | .200" | .750" | 1/4" |
| Boring Bars | .230" | 1" | 3/16" |
| Boring Bars | .230" | 1" | 3/16" |
| Boring Bars | .230" | 1.250" | 3/16" |
| Boring Bars | .230" | 1.250" | 3/16" |

| | | | |
|-------------|-------|--------|-------|
| Boring Bars | .230" | .500" | 3/16" |
| Boring Bars | .230" | .500" | 3/16" |
| Boring Bars | .230" | .750" | 3/16" |
| Boring Bars | .230" | .750" | 3/16" |
| Boring Bars | .300" | 1" | 3/16" |
| Boring Bars | .300" | 1" | 3/16" |
| Boring Bars | .300" | 1.250" | 3/16" |
| Boring Bars | .300" | 1.250" | 3/16" |
| Boring Bars | .290" | .500" | 3/16" |
| Boring Bars | .290" | .500" | 3/16" |
| Boring Bars | .300" | .750" | 3/16" |
| Boring Bars | .300" | .750" | 3/16" |
| Boring Bars | .360" | 1" | 3/16" |
| Boring Bars | .360" | 1" | 3/8" |
| Boring Bars | .360" | 1.250" | 3/8" |
| Boring Bars | .360" | 1.250" | 3/8" |
| Boring Bars | .360" | 1.500" | 3/8" |
| Boring Bars | .360" | 1.500" | 3/8" |
| Boring Bars | .360" | .750" | 3/8" |
| Boring Bars | .360" | .750" | 3/8" |
| Boring Bars | .385" | 1" | 1/2" |

| | | | |
|-------------|-------|--------|------|
| Boring Bars | .413" | 1" | 1/2" |
| Boring Bars | .460" | 1.250" | 1/2" |
| Boring Bars | .460" | 1.250" | 1/2" |
| Boring Bars | .460" | 1.500" | 1/2" |
| Boring Bars | .460" | 1.500" | 1/2" |
| Boring Bars | .460" | 1.800" | 1/2" |
| Boring Bars | .460" | 1.800" | 1/2" |
| Boring Bars | .490" | 1" | 1/2" |
| Boring Bars | .490" | 1" | 1/2" |
| Boring Bars | .490" | 1.250" | 1/2" |
| Boring Bars | .490" | 1.250" | 1/2" |
| Boring Bars | .490" | 1.500" | 1/2" |
| Boring Bars | .490" | 1.500" | 1/2" |
| Boring Bars | .490" | 1.800" | 1/2" |
| Boring Bars | .490" | 1.800" | 1/2" |



SOLID CARBIDE QUICK CHANGE RETAINING RING GROOVING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|----------------|---------------------|---------------------------|-----------------------|
| Grooving Tools | .180" | .625" | 3/16" |
| Grooving Tools | .180" | .250" | 3/16" |
| Grooving Tools | .180" | .375" | 3/16" |
| Grooving Tools | .180" | .500" | 3/16" |
| Grooving Tools | .180" | .625" | 3/16" |
| Grooving Tools | .180" | .250" | 3/16" |
| Grooving Tools | .180" | .375" | 3/16" |
| Grooving Tools | .180" | .500" | 3/16" |
| Grooving Tools | .245" | .625" | 1/4" |
| Grooving Tools | .245" | .250" | 1/4" |
| Grooving Tools | .245" | .375" | 1/4" |

| | | | |
|----------------|-------|--------|-------|
| Grooving Tools | .245" | .500" | 1/4" |
| Grooving Tools | .245" | .625" | 1/4" |
| Grooving Tools | .245" | .250" | 1/4" |
| Grooving Tools | .245" | .375" | 1/4" |
| Grooving Tools | .245" | .500" | 1/4" |
| Grooving Tools | .310" | .750" | 3/16" |
| Grooving Tools | .310" | .375" | 3/16" |
| Grooving Tools | .310" | .500" | 3/16" |
| Grooving Tools | .310" | .750" | 3/16" |
| Grooving Tools | .310" | .375" | 3/16" |
| Grooving Tools | .310" | .500" | 3/16" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | .495" | 1.500" | 1/2" |
|----------------|-------|--------|------|



SOLID CARBIDE QUICK CHANGE TOOLHOLDERS..INCH

| <u>TYPE</u> | <u>SHANK DIAMETER</u> |
|-------------|-----------------------|
| Toolholders | 5/8" |
| Toolholders | 5/8" |
| Toolholders | 5/8" |
| Toolholders | 5/8" |
| Toolholders | 3/4" |
| Toolholders | 3/4" |
| Toolholders | 3/4" |

| | |
|-------------|--------|
| Toolholders | 3/4" |
| Toolholders | 3/4" |
| Toolholders | 1" |
| Toolholders | 1" |
| Toolholders | 1" |
| Toolholders | 1" |
| Toolholders | 1" |
| Toolholders | 1-1/8" |
| Toolholders | 1-1/8" |
| Toolholders | 1-1/8" |
| Toolholders | 1-1/8" |
| Toolholders | 1-1/8" |
| Toolholders | 1-1/8" |
| Toolholders | 1-1/8" |
| Toolholders | 1-1/8" |
| Toolholders | 1-1/8" |
| Toolholders | 1-1/8" |
| Toolholders | 1-1/8" |
| Toolholders | 1-1/8" |
| Toolholders | 1/2" |
| Toolholders | 1/2" |



SOLID CARBIDE QUICK CHANGE METRIC SHANK TOOLHOLDERS

| <u>TYPE</u> | <u>SHANK DIAMETER</u> |
|-------------|-----------------------|
| Toolholders | 12mm |
| Toolholders | 12mm |
| Toolholders | 16mm |
| Toolholders | 16mm |
| Toolholders | 20mm |
| Toolholders | 22mm |
| Toolholders | 22mm |
| Toolholders | 25mm |
| Toolholders | 25mm |

| | |
|-------------|------|
| Toolholders | 32mm |
| Toolholders | 32mm |
| Toolholders | 12mm |
| Toolholders | 16mm |
| Toolholders | 16mm |
| Toolholders | 20mm |
| Toolholders | 20mm |
| Toolholders | 22mm |
| Toolholders | 22mm |
| Toolholders | 25mm |
| Toolholders | 25mm |
| Toolholders | 32mm |
| Toolholders | 32mm |
| Toolholders | 16mm |
| Toolholders | 16mm |
| Toolholders | 20mm |
| Toolholders | 20mm |
| Toolholders | 22mm |
| Toolholders | 22mm |
| Toolholders | 25mm |
| Toolholders | 25mm |

| | |
|-------------|------|
| Toolholders | 32mm |
| Toolholders | 32mm |
| Toolholders | 16mm |
| Toolholders | 20mm |
| Toolholders | 20mm |
| Toolholders | 22mm |
| Toolholders | 22mm |
| Toolholders | 25mm |
| Toolholders | 25mm |
| Toolholders | 32mm |
| Toolholders | 22mm |
| Toolholders | 25mm |
| Toolholders | 25mm |
| Toolholders | 32mm |



SOLID CARBIDE RETAINING RING GROOVING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM</u> | |
|----------------|---------------------|-------------------|-----------------------|
| | | <u>BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | .245" | .250" | 1/4" |
| Grooving Tools | 1/4" | .375" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .375" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | 1/4" | .250" | 1/4" |

| | | | |
|----------------|-------|--------|-------|
| Grooving Tools | 1/4" | .375" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 5/16" | .750" | 3/16" |
| Grooving Tools | .310" | .250" | 3/16" |
| Grooving Tools | 5/16" | .375" | 3/16" |
| Grooving Tools | 5/16" | .500" | 3/16" |
| Grooving Tools | 5/16" | .750" | 3/16" |
| Grooving Tools | 5/16" | .250" | 3/16" |
| Grooving Tools | 5/16" | .375" | 3/16" |
| Grooving Tools | 5/16" | .500" | 3/16" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | .370" | .250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |

| | | | |
|----------------|------|--------|------|
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 1/2" | .750" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1.250" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | .495" | .500" | 1/2" |

| | | | |
|----------------|------|--------|------|
| Grooving Tools | 1/2" | .750" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1.250" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | 1/2" | .500" | 1/2" |
| Grooving Tools | 1/2" | .750" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1.250" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | 1/2" | .750" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1.250" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |

| | | | |
|----------------|--------|---------------|------|
| .375" | 1-1/4" | Solid Carbide | RR-2 |
| Grooving Tools | 1/2" | .750" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1.250" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |



SOLID CARBIDE RETAINING RING GROOVING TOOL

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|----------------|---------------------|---------------------------|-----------------------|
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .375" | 1/4" |
| Grooving Tools | 1/4" | .375" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 5/16" | .750" | 3/16" |
| Grooving Tools | 5/16" | .750" | 3/16" |
| Grooving Tools | 5/16" | .250" | 3/16" |
| Grooving Tools | 5/16" | .250" | 3/16" |

| | | | |
|----------------|-------|--------|-------|
| Grooving Tools | 5/16" | .750" | 3/16" |
| Grooving Tools | 5/16" | .750" | 3/16" |
| Grooving Tools | 5/16" | .375" | 3/16" |
| Grooving Tools | 5/16" | .375" | 3/16" |
| Grooving Tools | 5/16" | .500" | 3/16" |
| Grooving Tools | 5/16" | .500" | 3/16" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |

| | | | |
|----------------|------|--------|------|
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .250" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |

| | | | |
|----------------|------|--------|------|
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 1/2" | .750" | 1/2" |
| Grooving Tools | 1/2" | .750" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | 1/2" | .750" | 1/2" |
| Grooving Tools | 1/2" | .750" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | 1/2" | .500" | 1/2" |
| Grooving Tools | 1/2" | .500" | 1/2" |



SOLID CARBIDE METRIC RETAINING RING GROOVING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|----------------|---------------------|---------------------------|-----------------------|
| Grooving Tools | 3mm | 10mm | 4mm |
| Grooving Tools | 3mm | 10mm | 4mm |
| Grooving Tools | 3mm | 15mm | 4mm |
| Grooving Tools | 3mm | 15mm | 4mm |
| Grooving Tools | 4mm | 10mm | 4mm |
| Grooving Tools | 4mm | 10mm | 4mm |
| Grooving Tools | 4mm | 15mm | 4mm |
| Grooving Tools | 4mm | 15mm | 4mm |

| | | | |
|----------------|-----|------|-----|
| Grooving Tools | 4mm | 20mm | 4mm |
| Grooving Tools | 4mm | 20mm | 4mm |
| Grooving Tools | 4mm | 20mm | 4mm |
| Grooving Tools | 5mm | 10mm | 6mm |
| Grooving Tools | 5mm | 10mm | 6mm |
| Grooving Tools | 6mm | 10mm | 6mm |
| Grooving Tools | 6mm | 20mm | 6mm |
| Grooving Tools | 6mm | 20mm | 6mm |
| Grooving Tools | 6mm | 25mm | 6mm |
| Grooving Tools | 6mm | 25mm | 6mm |
| Grooving Tools | 6mm | 25mm | 6mm |
| Grooving Tools | 6mm | 10mm | 6mm |
| Grooving Tools | 6mm | 10mm | 6mm |
| Grooving Tools | 6mm | 25mm | 6mm |
| Grooving Tools | 6mm | 25mm | 6mm |
| Grooving Tools | 6mm | 25mm | 6mm |
| Grooving Tools | 6mm | 15mm | 6mm |
| Grooving Tools | 6mm | 15mm | 6mm |
| Grooving Tools | 6mm | 15mm | 6mm |
| Grooving Tools | 6mm | 25mm | 6mm |
| Grooving Tools | 6mm | 25mm | 6mm |

| | | | |
|----------------|------|------|------|
| Grooving Tools | 6mm | 25mm | 6mm |
| Grooving Tools | 8mm | 20mm | 8mm |
| Grooving Tools | 8mm | 20mm | 8mm |
| Grooving Tools | 8mm | 30mm | 8mm |
| Grooving Tools | 8mm | 30mm | 8mm |
| Grooving Tools | 7mm | 10mm | 8mm |
| Grooving Tools | 8mm | 10mm | 8mm |
| Grooving Tools | 8mm | 20mm | 8mm |
| Grooving Tools | 8mm | 20mm | 8mm |
| Grooving Tools | 8mm | 40mm | 8mm |
| Grooving Tools | 8mm | 40mm | 8mm |
| Grooving Tools | 8mm | 10mm | 8mm |
| Grooving Tools | 8mm | 10mm | 8mm |
| Grooving Tools | 8mm | 10mm | 8mm |
| Grooving Tools | 8mm | 20mm | 8mm |
| Grooving Tools | 8mm | 20mm | 8mm |
| Grooving Tools | 8mm | 40mm | 8mm |
| Grooving Tools | 8mm | 40mm | 8mm |
| Grooving Tools | 10mm | 20mm | 10mm |
| Grooving Tools | 10mm | 20mm | 10mm |
| Grooving Tools | 10mm | 40mm | 10mm |

| | | | |
|----------------|------|------|------|
| Grooving Tools | 10mm | 40mm | 10mm |
| Grooving Tools | 10mm | 20mm | 10mm |
| Grooving Tools | 10mm | 20mm | 10mm |
| Grooving Tools | 10mm | 30mm | 10mm |
| Grooving Tools | 10mm | 30mm | 10mm |
| Grooving Tools | 10mm | 30mm | 10mm |
| Grooving Tools | 10mm | 20mm | 12mm |
| Grooving Tools | 12mm | 20mm | 12mm |
| Grooving Tools | 12mm | 30mm | 12mm |
| Grooving Tools | 12mm | 30mm | 12mm |
| Grooving Tools | 12mm | 40mm | 12mm |
| Grooving Tools | 12mm | 40mm | 12mm |
| Grooving Tools | 12mm | 40mm | 12mm |
| Grooving Tools | 12mm | 50mm | 12mm |
| Grooving Tools | 12mm | 50mm | 12mm |
| Grooving Tools | 12mm | 50mm | 12mm |
| Grooving Tools | 12mm | 50mm | 12mm |
| Grooving Tools | 12mm | 50mm | 12mm |
| Grooving Tools | 12mm | 50mm | 12mm |
| Grooving Tools | 12mm | 50mm | 12mm |



SOLID CARBIDE BRAZED BORING BARS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|-------------|---------------------|---------------------------|-----------------------|
| Boring Bars | 1.233" | 7/16" | 1" |
| Boring Bars | .320" | 3/16" | 1/4" |
| Boring Bars | .385" | 1/4" | 5/16" |
| Boring Bars | .460" | 1/4" | 3/8" |
| Boring Bars | 5/8" | 1/4" | 1/2" |
| Boring Bars | .795" | 1/4" | 5/8" |
| Boring Bars | .935" | 1/4" | 3/4" |
| | 8" | Carbide Tipped | Zinc tool coat |

| | | | |
|-------|--|--|--|
| .320" | | | |
|-------|--|--|--|



SOLID CARBIDE METRIC HEAT-TREATED STEEL TOOLHOLDERS

| <u>TYPE</u> | <u>SHANK DIAMETER</u> | <u>PRICE</u> |
|-------------|-----------------------|--------------|
| Toolholders | 16mm | \$32.24 |
| Toolholders | 20mm | \$37.44 |
| Toolholders | 16mm | \$32.24 |
| Toolholders | 20mm | \$37.44 |
| Toolholders | 12mm | \$32.24 |
| Toolholders | 16mm | \$32.24 |
| Toolholders | 20mm | \$37.44 |

| | | |
|-------------|------|---------|
| Toolholders | 12mm | \$32.24 |
| Toolholders | 16mm | \$32.24 |
| Toolholders | 20mm | \$37.44 |
| Toolholders | 12mm | \$32.24 |
| Toolholders | 16mm | \$32.24 |
| Toolholders | 20mm | \$37.44 |
| Toolholders | 12mm | \$32.24 |
| Toolholders | 16mm | \$32.24 |
| Toolholders | 20mm | \$37.44 |



SOLID CARBIDE BRAZED BORING BARS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|-------------|---------------------|---------------------------|-----------------------|
| Boring Bars | 5/8" | 5/8" | 3/4" |
| Boring Bars | 1/4" | 1/4" | 1/4" |
| Boring Bars | 5/16" | 3/8" | 5/16" |
| Boring Bars | 3/8" | 3/8" | 3/8" |
| Boring Bars | 7/16" | 1/2" | 7/16" |
| Boring Bars | 1/2" | 1/2" | 1/2" |



SOLID CARBIDE UNDERCUT GROOVING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|----------------|---------------------|---------------------------|-----------------------|
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | .322" | .500" | 3/16" |
| Grooving Tools | .322" | .500" | 3/16" |
| Grooving Tools | .325" | 1" | 3/16" |
| Grooving Tools | .325" | 1" | 3/16" |
| Grooving Tools | .325" | 1.250" | 3/16" |
| Grooving Tools | .325" | 1.250" | 3/16" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | .385" | 1" | 3/8" |
| Grooving Tools | .385" | 1" | 3/8" |
| Grooving Tools | .385" | 1" | 3/8" |
| Grooving Tools | .385" | 1" | 3/8" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | 1/2" | 1" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | .510" | 1" | 1/2" |
| Grooving Tools | .510" | 1" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |



SOLID CARBIDE UNDERCUT & PROFILE GROOVING TOOLS

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|----------------|---------------------|---------------------------|-----------------------|
| Grooving Tools | 17/64" | 1" | 1/4" |

| | | | |
|----------------|--------|--------|-------|
| Grooving Tools | 17/64" | 1" | 1/4" |
| Grooving Tools | 17/64" | .500" | 1/4" |
| Grooving Tools | 17/64" | .500" | 1/4" |
| Grooving Tools | .325" | 1" | 3/16" |
| Grooving Tools | .325" | 1" | 3/16" |
| Grooving Tools | .325" | .500" | 3/16" |
| Grooving Tools | .325" | .500" | 3/16" |
| Grooving Tools | .325" | 1" | 3/16" |
| Grooving Tools | .325" | 1" | 3/16" |
| Grooving Tools | .325" | 1.250" | 3/16" |
| Grooving Tools | .325" | 1.250" | 3/16" |
| Grooving Tools | .385" | 1" | 3/8" |
| Grooving Tools | .385" | 1" | 3/8" |
| Grooving Tools | .385" | 1.250" | 3/8" |
| Grooving Tools | .385" | 1.250" | 3/8" |
| Grooving Tools | .385" | 1" | 3/8" |
| Grooving Tools | .385" | 1" | 3/8" |
| Grooving Tools | .385" | 1" | 3/8" |
| Grooving Tools | .385" | 1" | 3/8" |
| Grooving Tools | .385" | 1.250" | 3/8" |
| Grooving Tools | .385" | 1.250" | 3/8" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | .510" | 1" | 1/2" |
| Grooving Tools | .510" | 1" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |
| Grooving Tools | .510" | 1" | 1/2" |
| Grooving Tools | .510" | 1" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |
| Grooving Tools | .510" | 1" | 1/2" |
| Grooving Tools | .510" | 1" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |
| Grooving Tools | .510" | 1.500" | 1/2" |



QUICK CHANGE RETAINING RING GROOVE BARS & TOOLHOLDERS

| <u>TYPE</u> | <u>MINIMUM</u> <u>BORE</u> | <u>MAXIMUM</u> | |
|----------------|-------------------------------|-----------------------------|---------------------------------|
| | | <u>BORE</u> <u>DEPTH</u> | <u>SHANK</u> <u>DIAMETER</u> |
| Grooving Tools | .180" | .250" | 3/16" |
| Grooving Tools | .180" | .375" | 3/16" |
| Grooving Tools | .180" | .500" | 3/16" |
| Grooving Tools | .180" | .625" | 3/16" |
| Grooving Tools | .180" | .250" | 3/16" |
| Grooving Tools | .180" | .375" | 3/16" |
| Grooving Tools | .180" | .500" | 3/16" |
| Grooving Tools | .180" | .625" | 3/16" |
| Grooving Tools | .245" | .250" | 1/4" |
| Grooving Tools | .245" | .375" | 1/4" |
| Grooving Tools | .245" | .500" | 1/4" |
| Grooving Tools | .245" | .625" | 1/4" |
| Grooving Tools | .245" | .250" | 1/4" |
| Grooving Tools | .245" | .375" | 1/4" |
| Grooving Tools | .245" | .500" | 1/4" |
| Grooving Tools | .245" | .625" | 1/4" |
| Grooving Tools | .310" | .375" | 5/16" |
| Grooving Tools | .310" | .500" | 5/16" |
| Grooving Tools | .310" | .750" | 5/16" |

| | | | |
|----------------|-------|--------|-------|
| Grooving Tools | .310" | .375" | 5/16" |
| Grooving Tools | .310" | .500" | 5/16" |
| Grooving Tools | .310" | .750" | 5/16" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .370" | .500" | 3/8" |
| Grooving Tools | .370" | .750" | 3/8" |
| Grooving Tools | .370" | 1" | 3/8" |
| Grooving Tools | .370" | 1.250" | 3/8" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |

| | | | |
|----------------|-------|--------|------|
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | .750" | 1/2" |
| Grooving Tools | .495" | 1" | 1/2" |
| Grooving Tools | .495" | 1.250" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Grooving Tools | .495" | 1.500" | 1/2" |
| Toolholders | N/A | N/A | 1/2" |
| Toolholders | N/A | N/A | 1/2" |
| Toolholders | N/A | N/A | 5/8" |
| Toolholders | N/A | N/A | 5/8" |
| Toolholders | N/A | N/A | 5/8" |
| Toolholders | N/A | N/A | 5/8" |
| Toolholders | N/A | N/A | 3/4" |

| | | | |
|-------------|-----|-----|------|
| Toolholders | N/A | N/A | 3/4" |
| Toolholders | N/A | N/A | 3/4" |
| Toolholders | N/A | N/A | 3/4" |
| Toolholders | N/A | N/A | 3/4" |
| Toolholders | N/A | N/A | 1" |
| Toolholders | N/A | N/A | 1" |
| Toolholders | N/A | N/A | 1" |
| Toolholders | N/A | N/A | 1" |
| Toolholders | N/A | N/A | 1" |



SOLID CARBIDE FULL RADIUS GROOVING TOOLS

| TYPE | <u>MINIMUM</u> | <u>MAXIMUM</u> | <u>SHANK</u> DIAMETER |
|----------------|----------------|----------------|--------------------------|
| | BORE | BORE DEPTH | |
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .375" | 1/4" |
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .375" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | 1/4" | .250" | 1/4" |
| Grooving Tools | 1/4" | .375" | 1/4" |
| Grooving Tools | 1/4" | .500" | 1/4" |
| Grooving Tools | 1/4" | .625" | 1/4" |
| Grooving Tools | 5/16" | .250" | 5/16" |
| Grooving Tools | 5/16" | .750" | 5/16" |
| Grooving Tools | 5/16" | .250" | 5/16" |
| Grooving Tools | 5/16" | .375" | 5/16" |
| Grooving Tools | 5/16" | .500" | 5/16" |
| Grooving Tools | 5/16" | .750" | 5/16" |
| Grooving Tools | 3/8" | .250" | 3/8" |

| | | | |
|----------------|------|--------|------|
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .375" | 3/8" |
| Grooving Tools | 3/8" | .500" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 3/8" | 1.250" | 3/8" |
| Grooving Tools | 3/8" | .750" | 3/8" |
| Grooving Tools | 3/8" | 1" | 3/8" |
| Grooving Tools | 1/2" | 1.500" | 1/2" |
| Grooving Tools | 1/2" | .500" | 1/2" |
| Grooving Tools | 1/2" | .750" | 1/2" |



STUBBY CARBIDE TIPPED BORING TOOLS & SET

| <u>TYPE</u> | <u>MINIMUM BORE</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> |
|-------------|---------------------|---------------------------|-----------------------|
| Boring Bars | 3/16" | 5/16" | 1/2" |
| Boring Bars | 3/4" | 1-17/32" | 3/4" |



ITM SOLID CARBIDE METRIC INTERNAL THREADING TOOLS

| <u>MINIMUM HOLE DIAMETER</u> | <u>THREADS PER INCH</u> | <u>PROJECTION</u> |
|------------------------------|-------------------------|-------------------|
| 4.60mm | 18 to 56 | 1.2mm |

| | | |
|--------|----------|-------|
| 4.60mm | 18 to 56 | 1.2mm |
| 4.60mm | 18 to 56 | 1.2mm |
| 4.60mm | 18 to 56 | 1.2mm |
| 4.60mm | 18 to 56 | 1.2mm |
| 5.10mm | 18 to 56 | 1.3mm |
| 5.10mm | 18 to 56 | 1.3mm |
| 5.10mm | 18 to 56 | 1.3mm |
| 5.10mm | 18 to 56 | 1.3mm |
| 5.80mm | 18 to 56 | 1.5mm |
| 5.80mm | 18 to 56 | 1.5mm |
| 5.80mm | 18 to 56 | 1.5mm |
| 5.80mm | 18 to 56 | 1.5mm |
| 5.80mm | 18 to 56 | 1.5mm |
| 5.80mm | 18 to 56 | 1.5mm |
| 5.80mm | 18 to 56 | 1.5mm |
| 7.40mm | 18 to 56 | 1.9mm |
| 7.40mm | 18 to 56 | 1.9mm |
| 7.40mm | 18 to 56 | 1.9mm |
| 7.40mm | 18 to 56 | 1.9mm |
| 7.40mm | 18 to 56 | 1.9mm |
| 7.40mm | 18 to 56 | 1.9mm |

| | | |
|--------|----------|-------|
| 7.40mm | 18 to 56 | 1.9mm |
|--------|----------|-------|



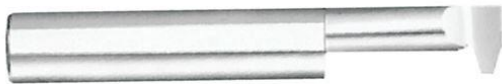
SOLID CARBIDE STUB ACME THREADING TOOLS

| <u>MINIMUM HOLE DIAMETER</u> | <u>THREADS PER INCH</u> | <u>PROJECTION</u> |
|--------------------------------------|---------------------------------|-------------------|
| .360" | 12 | .085" |
| .360" | 12 | .085" |
| .235" | 14 | .070" |
| .235" | 14 | .070" |
| .200" | 16 | .045" |

| | | |
|-------|----|-------|
| .200" | 16 | .045" |
| .360" | 12 | .085" |
| .360" | 12 | .085" |
| .440" | 10 | .120" |
| .440" | 10 | .120" |
| .490" | 5 | .120" |
| .490" | 5 | .120" |
| .490" | 8 | .120" |
| .490" | 8 | .120" |
| .235" | 14 | .070" |
| .235" | 14 | .070" |
| .360" | 12 | .085" |
| .360" | 12 | .085" |
| .490" | 10 | .120" |
| .490" | 10 | .120" |
| .490" | 5 | .120" |
| .490" | 5 | .120" |
| .490" | 6 | .120" |
| .490" | 6 | .120" |
| .490" | 7 | .120" |
| .490" | 7 | .120" |

| | | |
|-------|----|-------|
| .490" | 8 | .120" |
| .490" | 8 | .120" |
| .490" | 9 | .120" |
| .490" | 9 | .120" |
| .200" | 16 | .045" |
| .200" | 16 | .045" |
| .360" | 12 | .085" |
| .360" | 12 | .085" |
| .235" | 14 | .070" |
| .235" | 14 | .070" |
| .200" | 16 | .045" |
| .200" | 16 | .045" |
| .490" | 10 | .120" |
| .490" | 10 | .120" |
| .360" | 12 | .085" |
| .360" | 12 | .085" |
| .235" | 14 | .070" |
| .235" | 14 | .070" |
| .200" | 16 | .045" |
| .200" | 16 | .045" |
| .490" | 5 | .120" |

| | | |
|-------|---|-------|
| .490" | 5 | .120" |
| .490" | 8 | .120" |
| .490" | 8 | .120" |



SOLID CARBIDE INTERNAL ACME THREADING TOOLS

| <u>MINIMUM HOLE DIAMETER</u> | <u>THREADS PER INCH</u> | <u>PROJECTION</u> |
|--------------------------------------|---------------------------------|-------------------|
| .360" | 12 | .085" |
| .360" | 12 | .085" |

| | | |
|-------|----|-------|
| .235" | 14 | .070" |
| .235" | 14 | .070" |
| .200" | 16 | .045" |
| .200" | 16 | .045" |
| .360" | 12 | .085" |
| .360" | 12 | .085" |
| .235" | 14 | .070" |
| .235" | 14 | .070" |
| .490" | 10 | .120" |
| .490" | 10 | .120" |
| .490" | 5 | .120" |
| .490" | 5 | .120" |
| .490" | 6 | .120" |
| .490" | 6 | .120" |
| .490" | 8 | .120" |
| .490" | 8 | .120" |
| .360" | 12 | .085" |
| .360" | 12 | .085" |
| .490" | 10 | .120" |
| .490" | 10 | .120" |
| .490" | 5 | .120" |

| | | |
|-------|----|-------|
| .490" | 5 | .120" |
| .490" | 6 | .120" |
| .490" | 6 | .120" |
| .490" | 8 | .120" |
| .490" | 8 | .120" |
| .200" | 16 | .045" |
| .200" | 16 | .045" |
| .255" | 14 | .070" |
| .255" | 14 | .070" |
| .200" | 16 | .045" |
| .200" | 16 | .045" |
| .490" | 10 | .120" |
| .490" | 10 | .120" |
| .360" | 12 | .085" |
| .360" | 12 | .085" |
| .255" | 14 | .070" |
| .255" | 14 | .070" |
| .200" | 16 | .045" |
| .200" | 16 | .045" |
| .490" | 6 | .120" |
| .490" | 6 | .120" |

| | | |
|-------|---|-------|
| .490" | 8 | .120" |
| .490" | 8 | .120" |



SOLID CARBIDE INTERNAL SINGLE POINT THREADING TOOLS

| <u>MINIMUM HOLE DIAMETER</u> | <u>THREADS PER INCH</u> | <u>PROJECTION</u> |
|--------------------------------------|---------------------------------|-------------------|
| .040" | 56 to 76 | .015" |
| .040" | 56 to 76 | .015" |
| .040" | 56 to 76 | .015" |
| .050" | 48 to 76 | .020" |

| | | |
|----------|----------|----------|
| .050" | 48 to 76 | .020" |
| .050" | 48 to 76 | .020" |
| .060" | 40 to 76 | .020" |
| .060" | 40 to 76 | .020" |
| .060" | 40 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| Assorted | 10 to 56 | Assorted |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |

| | | |
|-------|----------|-------|
| 9/64" | 20 to 56 | .035" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |

| | | |
|-------|----------|-------|
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .490" | 8 to 24 | .120" |
| .490" | 8 to 24 | .120" |
| .490" | 8 to 24 | .120" |



SOLID CARBIDE LEFT HAND INTERNAL SINGLE POINT THREADING TOOLS

| <u>MINIMUM HOLE DIAMETER</u> | <u>THREADS PER INCH</u> | <u>PROJECTION</u> |
|------------------------------|-------------------------|-------------------|
| .040" | 56 to 76 | .015" |
| .040" | 56 to 76 | .015" |
| .050" | 48 to 76 | .015" |
| .050" | 48 to 76 | .015" |
| .060" | 40 to 76 | .015" |
| .060" | 40 to 76 | .015" |
| .060" | 40 to 76 | .020" |
| .060" | 40 to 76 | .020" |
| .060" | 40 to 76 | .020" |
| .060" | 40 to 76 | .020" |

| | | |
|-------|----------|-------|
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |

| | | |
|-------|----------|-------|
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |

| | | |
|-------|----------|-------|
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |

| | | |
|-------|----------|-------|
| .230" | 14 to 40 | .055" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |

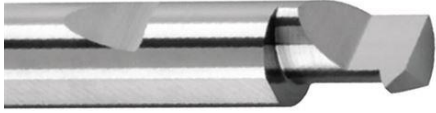
| | | |
|-------|----------|-------|
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |



SOLID CARBIDE THREAD RELIEF TOOLS

| <u>MINIMUM HOLE DIAMETER</u> | <u>PROJECTION</u> |
|--------------------------------------|-------------------|
| 1/8" | .040" |
| 1/8" | .040" |
| 3/16" | .040" |
| 3/16" | .040" |
| 3/16" | .040" |

| | |
|-------|-------|
| 3/16" | .040" |
| 1/4" | .050" |
| 1/4" | .050" |
| 1/4" | .050" |
| 1/4" | .050" |
| 5/16" | .075" |
| 5/16" | .075" |
| 5/16" | .075" |
| 5/16" | .075" |
| 3/8" | .100" |
| 3/8" | .100" |
| 3/8" | .100" |
| 3/8" | .100" |
| 1/2" | .125" |
| 1/2" | .125" |
| 1/2" | .125" |
| 1/2" | .125" |



SOLID CARBIDE QUICK CHANGE INTERNAL SINGLE POINT THREADING TOOLS.

| <u>MINIMUM HOLE DIAMETER</u> | <u>THREADS PER INCH</u> | <u>PROJECTION</u> |
|--------------------------------------|---------------------------------|-------------------|
| .035" | 56 to 80 | .015" |
| .035" | 56 to 80 | .015" |
| .035" | 56 to 80 | .015" |
| .040" | 56 to 80 | .015" |
| .040" | 56 to 80 | .015" |
| .040" | 56 to 80 | .015" |
| .050" | 48 to 80 | .020" |
| .050" | 48 to 80 | .020" |
| .050" | 48 to 80 | .020" |

| | | |
|-------|----------|-------|
| .060" | 40 to 80 | .020" |
| .060" | 40 to 80 | .020" |
| .060" | 40 to 80 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| 9/64" | 20 to 56 | .035" |

| | | |
|-------|----------|-------|
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |

| | | |
|-------|----------|-------|
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .460" | 8 to 24 | .120" |
| .460" | 8 to 24 | .120" |
| .460" | 8 to 24 | .120" |
| .490" | 8 to 24 | .120" |
| .490" | 8 to 24 | .120" |

| | | |
|-------|---------|-------|
| .490" | 8 to 24 | .120" |
|-------|---------|-------|



SOLID CARBIDE 60° INTERNAL THREADING TOOLS

| <u>MINIMUM HOLE DIAMETER</u> | <u>THREADS PER INCH</u> |
|--------------------------------------|-----------------------------|
| .040" | 56 to 76 |
| .040" | 56 to 76 |
| .040" | 56 to 76 |
| .050" | 48 to 76 |
| .050" | 48 to 76 |
| .050" | 48 to 76 |
| .060" | 40 to 76 |
| .060" | 40 to 76 |
| .060" | 40 to 76 |

| | |
|-------|----------|
| .080" | 32 to 76 |
| .080" | 32 to 76 |
| .080" | 32 to 76 |
| .100" | 32 to 64 |
| .100" | 32 to 64 |
| .100" | 32 to 64 |
| .100" | 32 to 64 |
| .100" | 32 to 64 |
| .120" | 24 to 56 |
| .120" | 24 to 56 |
| .120" | 24 to 56 |
| .120" | 24 to 56 |
| .120" | 24 to 56 |
| .120" | 24 to 56 |
| 9/64" | 20 to 56 |
| 9/64" | 20 to 56 |
| 9/64" | 20 to 56 |
| 9/64" | 20 to 56 |
| 9/64" | 20 to 56 |
| .160" | 20 to 56 |
| .160" | 20 to 56 |
| .160" | 20 to 56 |
| .160" | 20 to 56 |
| .160" | 20 to 56 |

| | |
|-------|----------|
| .180" | 18 to 56 |
| .180" | 18 to 56 |
| .180" | 18 to 56 |
| .180" | 18 to 56 |
| .200" | 16 to 40 |
| .200" | 16 to 40 |
| .200" | 16 to 40 |
| .200" | 16 to 40 |
| .230" | 14 to 40 |
| .230" | 14 to 40 |
| .230" | 14 to 40 |
| .230" | 14 to 40 |
| .230" | 14 to 40 |
| .230" | 14 to 40 |
| .290" | 12 to 40 |
| .290" | 12 to 40 |
| .290" | 12 to 40 |
| .290" | 12 to 40 |
| .290" | 12 to 40 |
| .320" | 10 to 32 |
| .320" | 10 to 32 |
| .320" | 10 to 32 |

| | |
|-------|----------|
| .320" | 10 to 32 |
| .320" | 10 to 32 |
| .360" | 10 to 32 |
| .360" | 10 to 32 |
| .360" | 10 to 32 |
| .360" | 10 to 32 |
| .360" | 10 to 32 |
| .360" | 10 to 32 |
| .490" | 8 to 24 |
| .490" | 8 to 24 |
| .490" | 8 to 24 |

| <u>MAXIMUM</u> <u>BORE</u> <u>DEPTH</u> | <u>TOOL</u> <u>MATERIAL</u> |
|---|--------------------------------|
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |

| | |
|----------|---------------|
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |
| Assorted | Solid Carbide |



QUICK CHANGE SOLID CARBIDE INTERNAL THREADING TOOLS

| <u>MINIMUM HOLE DIAMETER</u> | <u>THREADS PER INCH</u> | <u>PROJECTION</u> |
|--------------------------------------|---------------------------------|-------------------|
| .035" | 56 to 80 | .015" |
| .035" | 56 to 80 | .015" |
| .035" | 56 to 80 | .015" |
| .040" | 56 to 80 | .015" |
| .040" | 56 to 80 | .015" |
| .040" | 56 to 80 | .015" |
| .050" | 48 to 80 | .020" |
| .050" | 48 to 80 | .020" |
| .050" | 48 to 80 | .020" |
| .060" | 40 to 80 | .020" |
| .060" | 40 to 80 | .020" |
| .060" | 40 to 80 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .080" | 32 to 76 | .020" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |
| .100" | 32 to 64 | .025" |

| | | |
|-------|----------|-------|
| .100" | 32 to 64 | .025" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .110" | 32 to 64 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| .120" | 24 to 56 | .030" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| 9/64" | 20 to 56 | .035" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .160" | 20 to 56 | .040" |
| .180" | 18 to 56 | .040" |

| | | |
|-------|----------|-------|
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .180" | 18 to 56 | .040" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .200" | 16 to 40 | .045" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .230" | 14 to 40 | .055" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .290" | 12 to 40 | .070" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |
| .320" | 10 to 32 | .075" |

| | | |
|-------|----------|-------|
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .360" | 10 to 32 | .085" |
| .460" | 8 to 24 | .120" |
| .460" | 8 to 24 | .120" |
| .460" | 8 to 24 | .120" |
| .490" | 8 to 24 | .120" |
| .490" | 8 to 24 | .120" |
| .490" | 8 to 24 | .120" |





MINI SOLID CARBIDE BORING BARS

| <u>MINIMUM BORE DIAMETER</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> | <u>TOOL MATERIAL</u> | <u>OVERALL LENGTH</u> |
|--------------------------------------|-----------------------------------|---------------------------|--------------------------|---------------------------|
| .090" | .460" | 1/16" | Solid Carbide | 2" |
| .120" | .460" | 3/32" | Solid Carbide | 2" |
| .150" | .610" | 1/8" | Solid Carbide | 2" |
| .180" | .810" | 5/32" | Solid Carbide | 2" |
| .240" | .810" | 3/16" | Solid Carbide | 2-1/2" |

| | | | | |
|-------|-------|-------|---------------|--------|
| .300" | .960" | 1/4" | Solid Carbide | 2-1/2" |
| .360" | — | 5/16" | Solid Carbide | 2-1/2" |



SOLID CARBIDE COOLANT THROUGH BORING TOOLS FOR BORING HEADS

| <u>MINIMUM BORE DIAMETER</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> | <u>OVERALL LENGTH</u> |
|------------------------------|---------------------------|-----------------------|-----------------------|
| .040" | .200" | 8mm | 1-1/2" |
| .060" | 1/4" | 8mm | 1-1/2" |
| .080" | 1/4" | 8mm | 1-1/2" |

| | | | |
|-------|-------|-----|--------|
| .100" | 1/4" | 8mm | 1-1/2" |
| .120" | .400" | 8mm | 1-1/2" |
| .140" | 1/2" | 8mm | 1-1/2" |
| .160" | .600" | 8mm | 2-1/2" |
| .180" | 3/4" | 8mm | 2-1/2" |
| .200" | .800" | 8mm | 2-1/2" |
| .290" | .800" | 8mm | 2-1/2" |
| .230" | .800" | 8mm | 2-1/2" |



SOLID CARBIDE METRIC MINIATURE BORING TOOLS

| <u>MINIMUM</u> <u>BORE</u> <u>DIAMETER</u> | <u>MAXIMUM</u> <u>BORE</u> <u>DEPTH</u> | <u>SHANK</u> <u>DIAMETER</u> | <u>OVERALL</u> <u>LENGTH</u> |
|--|---|---------------------------------|---------------------------------|
| .50mm | 2mm | 3mm | 38mm |

| | | | |
|-------|--------|-----|------|
| .50mm | 2mm | 3mm | 38mm |
| .60mm | 2.50mm | 3mm | 38mm |
| .60mm | 2.50mm | 3mm | 38mm |
| .70mm | 3mm | 3mm | 38mm |
| .70mm | 3mm | 3mm | 38mm |
| .80mm | 3mm | 3mm | 38mm |
| .80mm | 3mm | 3mm | 38mm |
| .80mm | 4mm | 3mm | 38mm |
| .80mm | 4mm | 3mm | 38mm |



SOLID CARBIDE QUICK CHANGE MINIATURE BORING TOOLS..

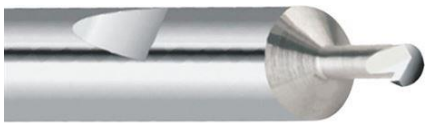
| <u>MINIMUM</u> <u>BORE</u> <u>DIAMETER</u> | <u>MAXIMUM</u> <u>BORE</u> <u>DEPTH</u> | <u>SHANK</u> <u>DIAMETER</u> | <u>OVERALL</u> <u>LENGTH</u> |
|--|---|---------------------------------|---------------------------------|
|--|---|---------------------------------|---------------------------------|

| | | | |
|-------|-------|-------|--------|
| 1/64" | .050" | 3/16" | 1-1/2" |
| 1/64" | .050" | 3/16" | 1-1/2" |
| .020" | .075" | 3/16" | 1-1/2" |
| .020" | .075" | 3/16" | 1-1/2" |
| .025" | .100" | 3/16" | 1-1/2" |
| .025" | .100" | 3/16" | 1-1/2" |
| .030" | .100" | 3/16" | 1-1/2" |
| .030" | .100" | 3/16" | 1-1/2" |
| .035" | .100" | 3/16" | 1-1/2" |
| .035" | .100" | 3/16" | 1-1/2" |
| .035" | .150" | 3/16" | 1-1/2" |
| .035" | .150" | 3/16" | 1-1/2" |
| .040" | .150" | 3/16" | 1-1/2" |
| .040" | .150" | 3/16" | 1-1/2" |
| .040" | .200" | 3/16" | 1-1/2" |
| .040" | .200" | 3/16" | 1-1/2" |
| .045" | .150" | 3/16" | 1-1/2" |
| .045" | .150" | 3/16" | 1-1/2" |
| .045" | .200" | 3/16" | 1-1/2" |
| .045" | .200" | 3/16" | 1-1/2" |
| .050" | .150" | 3/16" | 1-1/2" |

| | | | |
|-------|-------|-------|--------|
| .050" | .150" | 3/16" | 1-1/2" |
| .050" | .200" | 3/16" | 1-1/2" |
| .050" | .200" | 3/16" | 1-1/2" |
| .050" | .300" | 3/16" | 1-1/2" |
| .050" | .300" | 3/16" | 1-1/2" |
| .060" | .150" | 3/16" | 1-1/2" |
| .060" | .150" | 3/16" | 1-1/2" |
| .060" | .200" | 3/16" | 1-1/2" |
| .060" | .200" | 3/16" | 1-1/2" |
| .060" | .300" | 3/16" | 1-1/2" |
| .060" | .300" | 3/16" | 1-1/2" |
| .060" | .400" | 3/16" | 1-1/2" |
| .060" | .400" | 3/16" | 1-1/2" |
| .060" | 1/2" | 3/16" | 1-1/2" |
| .060" | 1/2" | 3/16" | 1-1/2" |
| .070" | .150" | 3/16" | 1-1/2" |
| .070" | .150" | 3/16" | 1-1/2" |
| .070" | .200" | 3/16" | 1-1/2" |
| .070" | .200" | 3/16" | 1-1/2" |
| .070" | .300" | 3/16" | 1-1/2" |
| .070" | .300" | 3/16" | 1-1/2" |

| | | | |
|-------|-------|-------|--------|
| .070" | .400" | 3/16" | 1-1/2" |
| .070" | .400" | 3/16" | 1-1/2" |
| .070" | 1/2" | 3/16" | 1-1/2" |
| .070" | 1/2" | 3/16" | 1-1/2" |
| .080" | .150" | 3/16" | 1-1/2" |
| .080" | .150" | 3/16" | 1-1/2" |
| .080" | .200" | 3/16" | 1-1/2" |
| .080" | .200" | 3/16" | 1-1/2" |
| .080" | .300" | 3/16" | 1-1/2" |
| .080" | .300" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .080" | .600" | 3/16" | 2" |
| .080" | .600" | 3/16" | 2" |
| .090" | .300" | 3/16" | 1-1/2" |
| .090" | .300" | 3/16" | 1-1/2" |
| .090" | 1/2" | 3/16" | 1-1/2" |
| .090" | 1/2" | 3/16" | 1-1/2" |
| .090" | .700" | 3/16" | 2" |
| .090" | .700" | 3/16" | 2" |
| .100" | .300" | 3/16" | 1-1/2" |

| | | | |
|-------|-------|-------|--------|
| .100" | .300" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |
| .100" | .700" | 3/16" | 2" |
| .100" | .700" | 3/16" | 2" |
| .100" | .800" | 3/16" | 2" |
| .100" | .800" | 3/16" | 2" |



SOLID CARBIDE QUICK CHANGE MINIATURE FULL RADIUS GROOVING TOOLS

| <u>MINIMUM</u> <u>BORE</u> <u>DIAMETER</u> | <u>MAXIMUM</u> <u>BORE</u> <u>DEPTH</u> | <u>SHANK</u> <u>DIAMETER</u> | <u>OVERALL</u> <u>LENGTH</u> |
|--|---|---------------------------------|---------------------------------|
| .080" | 1/4" | 3/16" | 1-1/2" |
| .080" | 1/4" | 3/16" | 1-1/2" |

| | | | |
|-------|-------|-------|--------|
| .100" | 1/4" | 3/16" | 1-1/2" |
| .100" | 1/4" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |
| .100" | 3/4" | 3/16" | 2" |
| .100" | 3/4" | 3/16" | 2" |
| .080" | 1/4" | 3/16" | 1-1/2" |
| .080" | 1/4" | 3/16" | 1-1/2" |
| .100" | 1/4" | 3/16" | 1-1/2" |
| .100" | 1/4" | 3/16" | 1-1/2" |
| .120" | 1/4" | 3/16" | 1-1/2" |
| .120" | 1/4" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |

| | | | |
|-------|-------|-------|--------|
| .100" | 1/2" | 3/16" | 1-1/2" |
| .120" | 1/2" | 3/16" | 1-1/2" |
| .120" | 1/2" | 3/16" | 1-1/2" |
| .100" | 3/4" | 3/16" | 2" |
| .100" | 3/4" | 3/16" | 2" |
| .120" | 3/4" | 3/16" | 2" |
| .120" | 3/4" | 3/16" | 2" |
| .080" | 1/4" | 3/16" | 1-1/2" |
| .080" | 1/4" | 3/16" | 1-1/2" |
| .100" | 1/4" | 3/16" | 1-1/2" |
| .100" | 1/4" | 3/16" | 1-1/2" |
| .120" | 1/4" | 3/16" | 1-1/2" |
| .120" | 1/4" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |
| .120" | 1/2" | 3/16" | 1-1/2" |
| .120" | 1/2" | 3/16" | 1-1/2" |

| | | | |
|-------|------|-------|----|
| .100" | 3/4" | 3/16" | 2" |
| .100" | 3/4" | 3/16" | 2" |
| .120" | 3/4" | 3/16" | 2" |
| .120" | 3/4" | 3/16" | 2" |



SOLID CARBIDE QUICK CHANGE MINIATURE RETAINING RING GROOVING TOOLS

| <u>MINIMUM</u> <u>BORE</u> <u>DIAMETER</u> | <u>MAXIMUM</u> <u>BORE</u> <u>DEPTH</u> | <u>SHANK</u> <u>DIAMETER</u> | <u>OVERALL</u> <u>LENGTH</u> |
|--|---|---------------------------------|---------------------------------|
|--|---|---------------------------------|---------------------------------|

| | | | |
|-------|-------|-------|--------|
| .060" | .100" | 3/16" | 1-1/2" |
| .060" | .100" | 3/16" | 1-1/2" |
| .060" | .150" | 3/16" | 1-1/2" |
| .060" | .150" | 3/16" | 1-1/2" |
| .060" | 1/4" | 3/16" | 1-1/2" |
| .060" | 1/4" | 3/16" | 1-1/2" |
| .060" | .100" | 3/16" | 1-1/2" |
| .060" | .100" | 3/16" | 1-1/2" |
| .060" | .150" | 3/16" | 1-1/2" |
| .060" | .150" | 3/16" | 1-1/2" |
| .060" | 1/4" | 3/16" | 1-1/2" |
| .060" | 1/4" | 3/16" | 1-1/2" |
| .080" | 1/4" | 3/16" | 1-1/2" |
| .080" | 1/4" | 3/16" | 1-1/2" |
| .100" | 1/4" | 3/16" | 1-1/2" |
| .100" | 1/4" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |

| | | | |
|-------|-------|-------|--------|
| .100" | 1/2" | 3/16" | 1-1/2" |
| .100" | 3/4" | 3/16" | 2" |
| .100" | 3/4" | 3/16" | 2" |
| .060" | .100" | 3/16" | 1-1/2" |
| .060" | .100" | 3/16" | 1-1/2" |
| .060" | .150" | 3/16" | 1-1/2" |
| .060" | .150" | 3/16" | 1-1/2" |
| .060" | 1/4" | 3/16" | 1-1/2" |
| .060" | 1/4" | 3/16" | 1-1/2" |
| .080" | 1/4" | 3/16" | 1-1/2" |
| .080" | 1/4" | 3/16" | 1-1/2" |
| .100" | 1/4" | 3/16" | 1-1/2" |
| .100" | 1/4" | 3/16" | 1-1/2" |
| .120" | 1/4" | 3/16" | 1-1/2" |
| .120" | 1/4" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |

| | | | |
|-------|-------|-------|--------|
| .120" | 1/2" | 3/16" | 1-1/2" |
| .120" | 1/2" | 3/16" | 1-1/2" |
| .100" | 3/4" | 3/16" | 2" |
| .100" | 3/4" | 3/16" | 2" |
| .120" | 3/4" | 3/16" | 2" |
| .120" | 3/4" | 3/16" | 2" |
| .080" | 1/4" | 3/16" | 1-1/2" |
| .080" | 1/4" | 3/16" | 1-1/2" |
| .100" | 1/4" | 3/16" | 1-1/2" |
| .100" | 1/4" | 3/16" | 1-1/2" |
| .120" | 1/4" | 3/16" | 1-1/2" |
| .120" | 1/4" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | .375" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .080" | 1/2" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |
| .100" | 1/2" | 3/16" | 1-1/2" |
| .120" | 1/2" | 3/16" | 1-1/2" |
| .120" | 1/2" | 3/16" | 1-1/2" |
| .100" | 3/4" | 3/16" | 2" |

| | | | |
|-------|------|-------|----|
| .100" | 3/4" | 3/16" | 2" |
| .120" | 3/4" | 3/16" | 2" |
| .120" | 3/4" | 3/16" | 2" |



EXTENDED REACH MBE MICRO INTERNAL DIAMETER PROFILE SOLID CARBIDE BORING BARS

| <u>MINIMUM</u> <u>BORE</u> <u>DIAMETER</u> | <u>MAXIMUM</u> <u>BORE</u> <u>DEPTH</u> | <u>SHANK</u> <u>DIAMETER</u> | <u>OVERALL</u> <u>LENGTH</u> |
|--|---|---------------------------------|---------------------------------|
|--|---|---------------------------------|---------------------------------|

| | | | |
|-------|-------|------|--------|
| 1/64" | .075" | 1/8" | 1-1/2" |
| 1/64" | .075" | 1/8" | 1-1/2" |
| .40mm | 2mm | 3mm | 38mm |
| .40mm | 2mm | 3mm | 38mm |
| .50mm | 2mm | 3mm | 38mm |
| .50mm | 2mm | 3mm | 38mm |
| .020" | .075" | 1/8" | 1-1/2" |
| .020" | .075" | 1/8" | 1-1/2" |
| .60mm | 3mm | 3mm | 38mm |
| .60mm | 3mm | 3mm | 38mm |
| .025" | 1/8" | 1/8" | 1-1/2" |
| .025" | 1/8" | 1/8" | 1-1/2" |
| .70mm | 3mm | 3mm | 38mm |
| .70mm | 3mm | 3mm | 38mm |
| .030" | 1/8" | 1/8" | 1-1/2" |
| .030" | 1/8" | 1/8" | 1-1/2" |
| .80mm | 3mm | 3mm | 38mm |
| .80mm | 3mm | 3mm | 38mm |
| .035" | 1/8" | 1/8" | 1-1/2" |
| .035" | 1/8" | 1/8" | 1-1/2" |
| .90mm | 3mm | 3mm | 38mm |

| | | | |
|--------|------|------|--------|
| .90mm | 3mm | 3mm | 38mm |
| 1mm | 5mm | 3mm | 38mm |
| 1mm | 5mm | 3mm | 38mm |
| .040" | 1/8" | 1/8" | 1-1/2" |
| .040" | 1/8" | 1/8" | 1-1/2" |
| 1.10mm | 5mm | 3mm | 38mm |
| 1.10mm | 5mm | 3mm | 38mm |
| .045" | 1/4" | 1/8" | 1-1/2" |
| .045" | 1/4" | 1/8" | 1-1/2" |
| 1.20mm | 5mm | 3mm | 38mm |
| 1.20mm | 5mm | 3mm | 38mm |
| .050" | 1/4" | 1/8" | 1-1/2" |
| .050" | 1/4" | 1/8" | 1-1/2" |
| 1.30mm | 5mm | 3mm | 38mm |
| 1.30mm | 5mm | 3mm | 38mm |
| .055" | 1/4" | 1/8" | 1-1/2" |
| .055" | 1/4" | 1/8" | 1-1/2" |
| 1.50mm | 10mm | 3mm | 38mm |
| 1.50mm | 10mm | 3mm | 38mm |
| .060" | 1/4" | 1/8" | 1-1/2" |
| .060" | 1/4" | 1/8" | 1-1/2" |

| | | | |
|--------|--------|-------|--------|
| 1.70mm | 10mm | 3mm | 38mm |
| 1.70mm | 10mm | 3mm | 38mm |
| 2mm | 10mm | 2mm | 38mm |
| 2mm | 10mm | 2mm | 38mm |
| .080" | 1/2" | 1/8" | 1-1/2" |
| .080" | 1/2" | 1/8" | 1-1/2" |
| .100" | .600" | 1/8" | 1-1/2" |
| .100" | .600" | 1/8" | 1-1/2" |
| 7/64" | .700" | 1/8" | 1-1/2" |
| 7/64" | .700" | 1/8" | 1-1/2" |
| 3mm | 20mm | 5mm | 50mm |
| 3mm | 20mm | 5mm | 50mm |
| .120" | .850" | 3/16" | 2" |
| .120" | .850" | 3/16" | 2" |
| 3.50mm | 25mm | 5mm | 50mm |
| 3.50mm | 25mm | 5mm | 50mm |
| .140" | .900" | 3/16" | 2" |
| .140" | .900" | 3/16" | 2" |
| 4mm | 27mm | 5mm | 50mm |
| 4mm | 27mm | 5mm | 50mm |
| .160" | 1.100" | 3/16" | 2-1/2" |

| | | | |
|--------|--------|-------|--------|
| .160" | 1.100" | 3/16" | 2-1/2" |
| 4.50mm | 32mm | 8mm | 65mm |
| 4.50mm | 32mm | 8mm | 65mm |
| .180" | 1-1/4" | 1/4" | 2-1/2" |
| .180" | 1-1/4" | 1/4" | 2-1/2" |
| 5mm | 32mm | 8mm | 65mm |
| 5mm | 32mm | 8mm | 65mm |
| .200" | 1.400" | 1/4" | 3" |
| .200" | 1.400" | 1/4" | 3" |
| 5.50mm | 32mm | 8mm | 65mm |
| 5.50mm | 32mm | 8mm | 65mm |
| .220" | 1-1/2" | 1/4" | 3" |
| .220" | 1-1/2" | 1/4" | 3" |
| 6mm | 35mm | 8mm | 65mm |
| 6mm | 35mm | 8mm | 65mm |
| .240" | 1-3/4" | 1/4" | 3" |
| .240" | 1-3/4" | 1/4" | 3" |



STANDARD LENGTH INTERNAL DIAMETER PROFILE SOLID CARBIDE BORING BARS

| <u>MINIMUM BORE DIAMETER</u> | <u>MAXIMUM BORE DEPTH</u> | <u>SHANK DIAMETER</u> | <u>FINISH COATING</u> | <u>OVERALL LENGTH</u> |
|--------------------------------------|-----------------------------------|---------------------------|---------------------------|---------------------------|
| 1/64" | .030" | 1/8" | Bright | 1-1/2" |
| 1/64" | .030" | 1/8" | AlTiN | 1-1/2" |
| .40mm | 1mm | 3mm | Bright | 38mm |
| .40mm | 1mm | 3mm | AlTiN | 38mm |
| .50mm | 1mm | 3mm | Bright | 38mm |
| .50mm | 1mm | 3mm | AlTiN | 38mm |

| | | | | |
|--------|--------|------|--------|--------|
| .020" | .030" | 1/8" | Bright | 1-1/2" |
| .020" | .030" | 1/8" | AlTiN | 1-1/2" |
| .60mm | 1.30mm | 3mm | Bright | 38mm |
| .60mm | 1.30mm | 3mm | AlTiN | 38mm |
| .025" | .050" | 1/8" | Bright | 1-1/2" |
| .025" | .050" | 1/8" | AlTiN | 1-1/2" |
| .70mm | 1.30mm | 3mm | Bright | 38mm |
| .70mm | 1.30mm | 3mm | AlTiN | 38mm |
| .030" | .050" | 1/8" | Bright | 1-1/2" |
| .030" | .050" | 1/8" | AlTiN | 1-1/2" |
| .80mm | 1.30mm | 3mm | Bright | 38mm |
| .80mm | 1.30mm | 3mm | AlTiN | 38mm |
| .035" | .050" | 1/8" | Bright | 1-1/2" |
| .035" | .050" | 1/8" | AlTiN | 1-1/2" |
| .90mm | 1.30mm | 3mm | Bright | 38mm |
| .90mm | 1.30mm | 3mm | AlTiN | 38mm |
| 1mm | 2.50mm | 3mm | Bright | 38mm |
| 1mm | 2.50mm | 3mm | AlTiN | 38mm |
| .040" | .050" | 1/8" | Bright | 1-1/2" |
| .040" | .050" | 1/8" | AlTiN | 1-1/2" |
| 1.10mm | 2.50mm | 3mm | Bright | 38mm |

| | | | | |
|--------|--------|------|--------|--------|
| 1.10mm | 2.50mm | 3mm | AlTiN | 38mm |
| .045" | .100" | 1/8" | Bright | 1-1/2" |
| .045" | .100" | 1/8" | AlTiN | 1-1/2" |
| 1.20mm | 2.50mm | 3mm | Bright | 38mm |
| 1.20mm | 2.50mm | 3mm | AlTiN | 38mm |
| .050" | .100" | 1/8" | Bright | 1-1/2" |
| .050" | .100" | 1/8" | AlTiN | 1-1/2" |
| 1.30mm | 2.50mm | 3mm | Bright | 38mm |
| 1.30mm | 2.50mm | 3mm | AlTiN | 38mm |
| .055" | .100" | 1/8" | Bright | 1-1/2" |
| .055" | .100" | 1/8" | AlTiN | 1-1/2" |
| 1.50mm | 6mm | 3mm | Bright | 38mm |
| 1.50mm | 6mm | 3mm | AlTiN | 38mm |
| .060" | .100" | 1/8" | Bright | 1-1/2" |
| .060" | .100" | 1/8" | AlTiN | 1-1/2" |
| 1.70mm | 7mm | 3mm | Bright | 38mm |
| 1.70mm | 7mm | 3mm | AlTiN | 38mm |
| 2mm | 8mm | 3mm | Bright | 38mm |
| 2mm | 8mm | 3mm | AlTiN | 38mm |
| .080" | 1/4" | 1/8" | Bright | 1-1/2" |
| .080" | 1/4" | 1/8" | AlTiN | 1-1/2" |

| | | | | |
|--------|-------|-------|--------|--------|
| .100" | .375" | 1/8" | Bright | 1-1/2" |
| .100" | .375" | 1/8" | AlTiN | 1-1/2" |
| 7/64" | 1/2" | 1/8" | Bright | 1-1/2" |
| 7/64" | 1/2" | 1/8" | AlTiN | 1-1/2" |
| 3mm | 15mm | 5mm | Bright | 50mm |
| 3mm | 15mm | 5mm | AlTiN | 50mm |
| .120" | .600" | 3/16" | Bright | 2" |
| .120" | .600" | 3/16" | AlTiN | 2" |
| 3.50mm | 20mm | 5mm | Bright | 50mm |
| 3.50mm | 20mm | 5mm | AlTiN | 50mm |
| .140" | .700" | 3/16" | Bright | 2" |
| .140" | .700" | 3/16" | AlTiN | 2" |
| 4mm | 22mm | 5mm | Bright | 50mm |
| 4mm | 22mm | 5mm | AlTiN | 50mm |
| .160" | .800" | 3/16" | Bright | 2-1/2" |
| .160" | .800" | 3/16" | AlTiN | 2-1/2" |
| 4.50mm | 23mm | 8mm | Bright | 65mm |
| 4.50mm | 23mm | 8mm | AlTiN | 65mm |
| .180" | .900" | 1/4" | Bright | 2-1/2" |
| .180" | .900" | 1/4" | AlTiN | 2-1/2" |
| 5mm | 25mm | 8mm | Bright | 65mm |

| | | | | |
|--------|--------|------|--------|------|
| 5mm | 25mm | 8mm | AlTiN | 65mm |
| .200" | 1" | 1/4" | Bright | 3" |
| .200" | 1" | 1/4" | AlTiN | 3" |
| 5.50mm | 27mm | 8mm | Bright | 65mm |
| 5.50mm | 27mm | 8mm | AlTiN | 65mm |
| .220" | 1-1/4" | 1/4" | Bright | 3" |
| .220" | 1-1/4" | 1/4" | AlTiN | 3" |
| 6mm | 29mm | 8mm | Bright | 65mm |
| 6mm | 29mm | 8mm | AlTiN | 65mm |
| .240" | 1-1/2" | 1/4" | Bright | 3" |
| .240" | 1-1/2" | 1/4" | AlTiN | 3" |



CARMET
TOOLS & INSERTS

SOLID CARBIDE MINIATURE BORING TOOLS & SET

| <u>MINIMUM</u> <u>BORE</u> <u>DIAMETER</u> | <u>MAXIMUM</u> <u>BORE</u> <u>DEPTH</u> | <u>SHANK</u> <u>DIAMETER</u> | <u>OVERALL</u> <u>LENGTH</u> |
|--|---|---------------------------------|---------------------------------|
| 1/64" | .050" | 1/8" | 1-1/2" |
| .020" | .075" | 1/8" | 1-1/2" |
| .025" | .100" | 1/8" | 1-1/2" |
| .030" | .100" | 1/8" | 1-1/2" |
| .035" | .100" | 1/8" | 1-1/2" |
| .035" | .150" | 1/8" | 1-1/2" |
| .040" | .100" | 1/8" | 1-1/2" |
| .040" | .150" | 1/8" | 1-1/2" |
| .045" | .100" | 1/8" | 1-1/2" |
| .045" | .150" | 1/8" | 1-1/2" |
| .020" to .045" by .005" | .075" to .100" | 1/8" | 1-1/2" |

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