2019 CATALOG

INTERNAL TOOL INC.



WWW.GENERALCUTTINGTOOLS.COM

SPECIALIZING IN CARBIDE CUTTING TOOLS

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INTERNAL TOOL INC

2019 CATALOG

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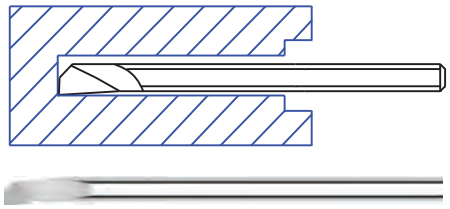
Carbide Cutting Tools

General Cutting Tools

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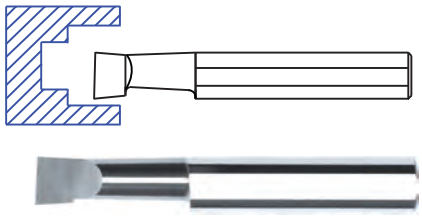
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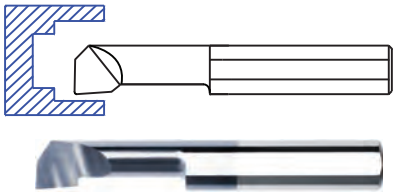
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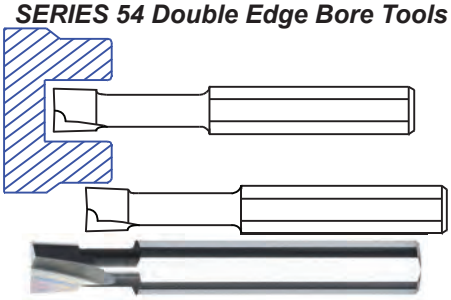
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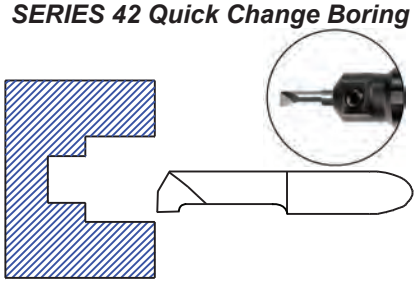
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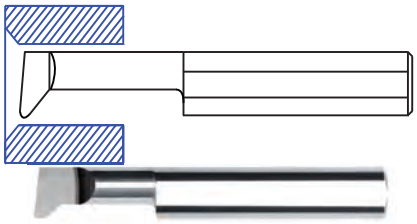
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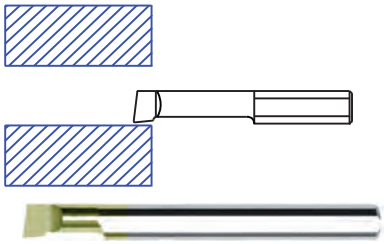
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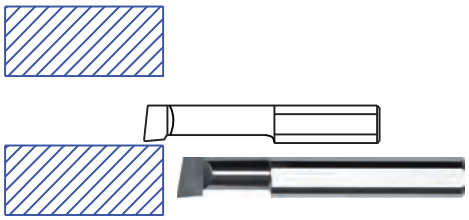
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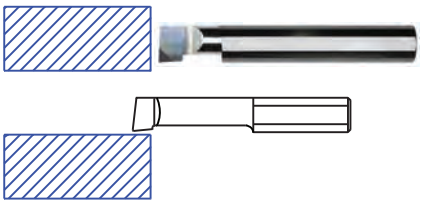
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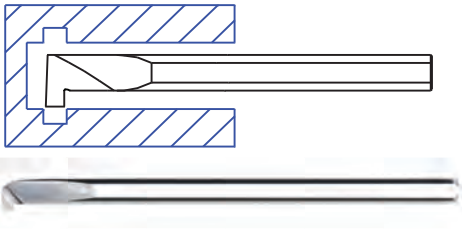
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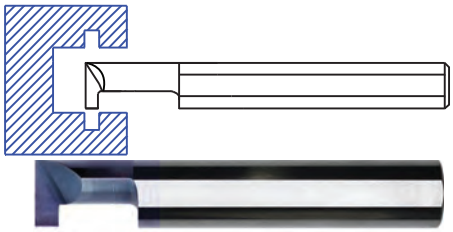
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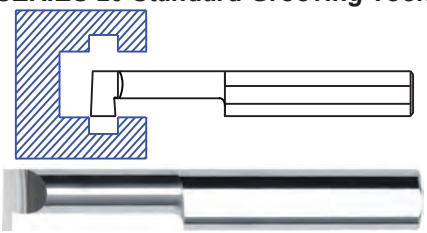
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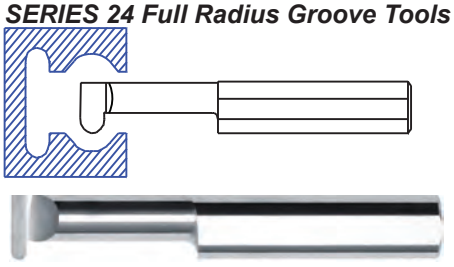
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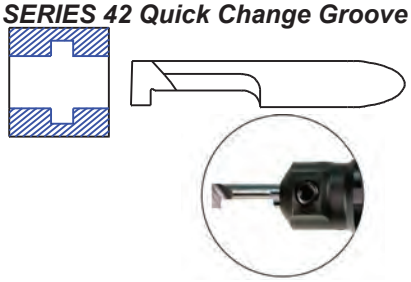
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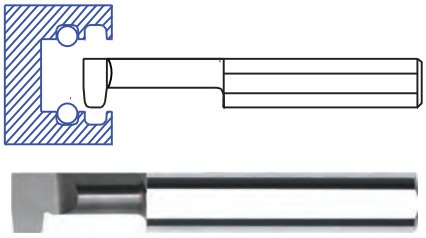
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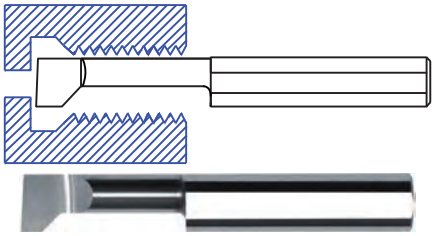
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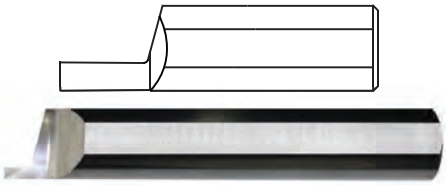
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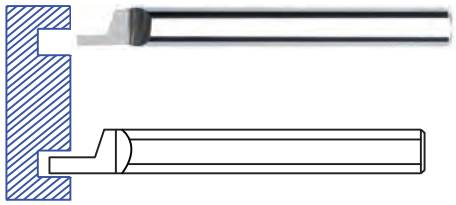
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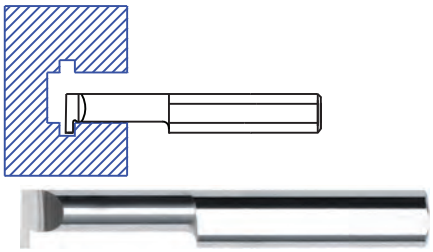
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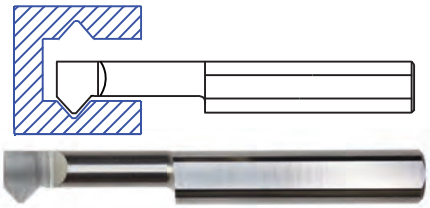
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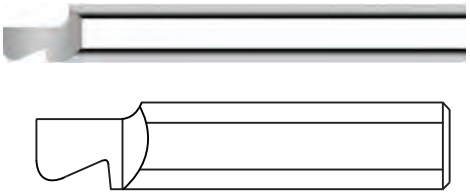
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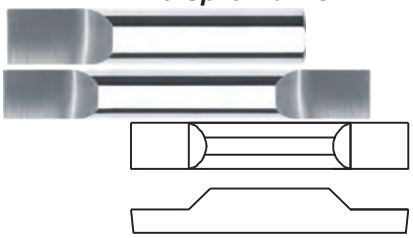
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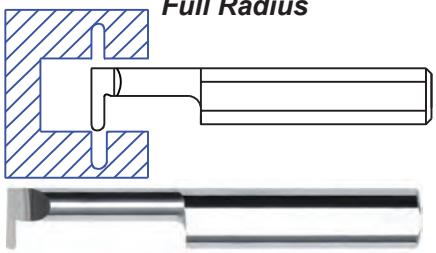
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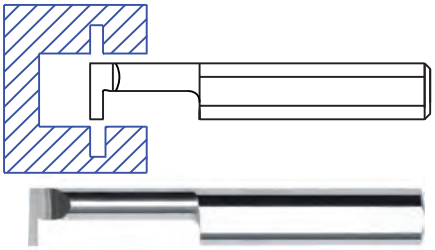
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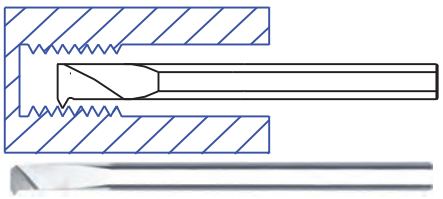
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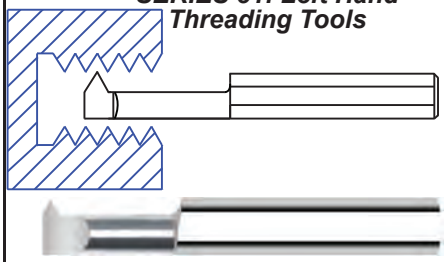
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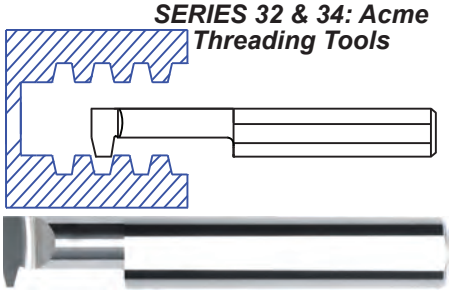
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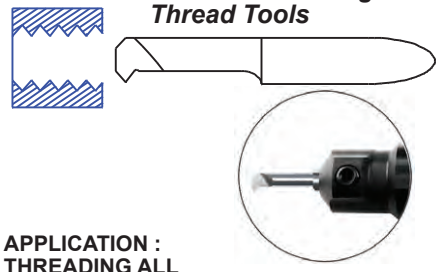
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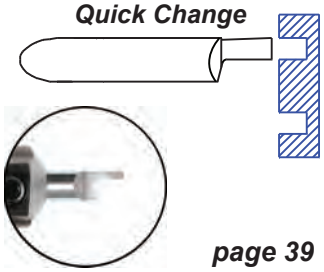
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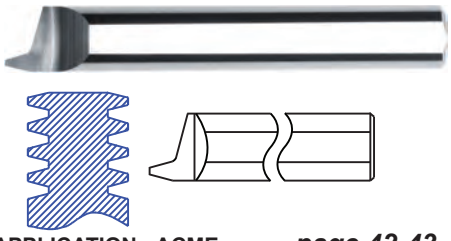
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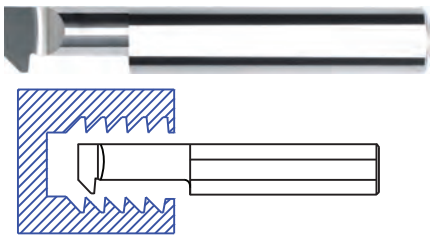
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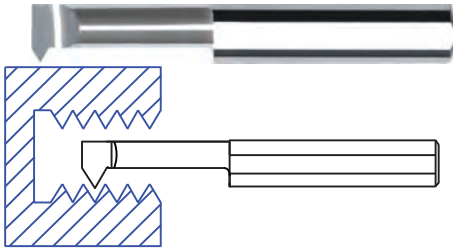
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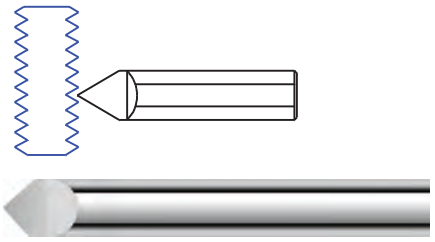
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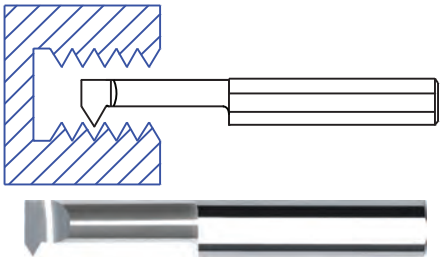
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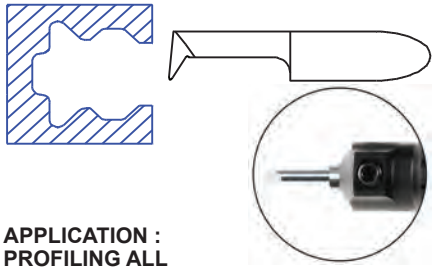
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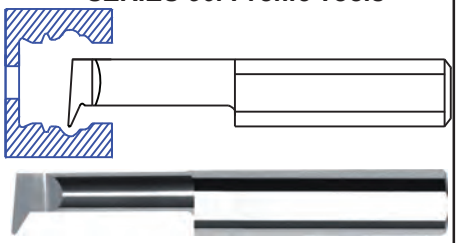
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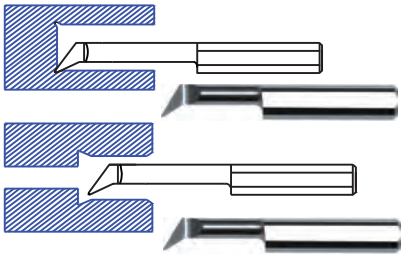
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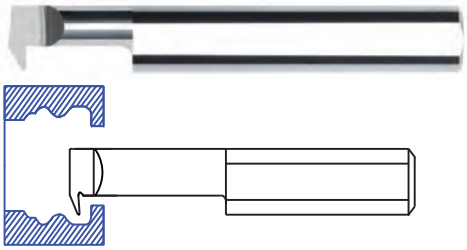
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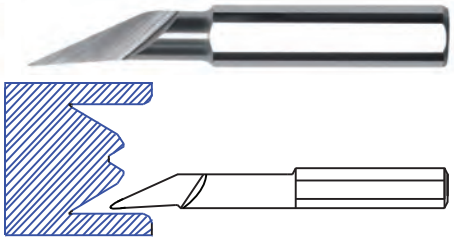
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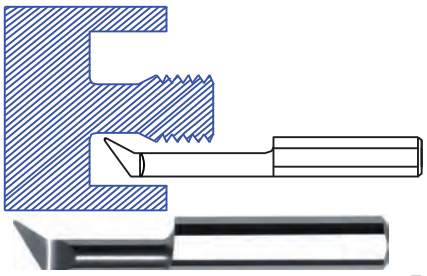
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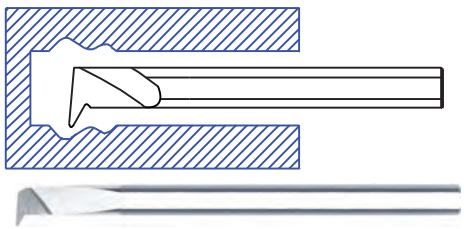
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SERIES 56: L.H.Offset Profile Tools



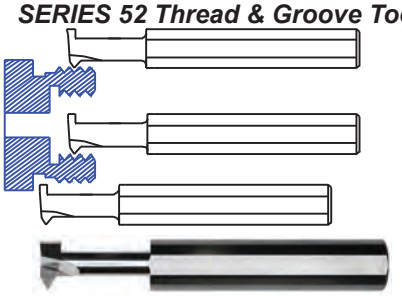
APPLICATION : LEFT HAND OFFSET PROFILING page 52

SERIES 09: Multi-Reach Profile Tools



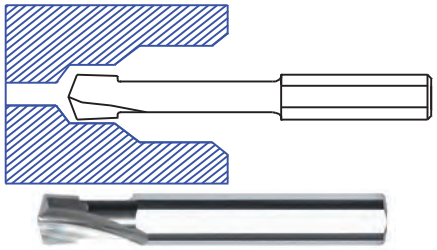
APPLICATION : DEEP HOLE PROFILING page 51

SERIES 52 Thread & Groove Tools



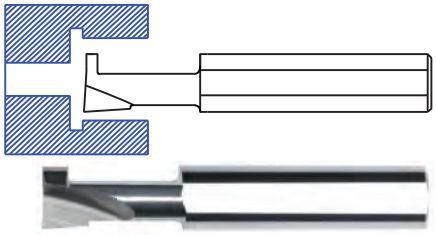
APPLICATION : THREAD & GROOVE WITH THE SAME TOOL page 26

SERIES 59 Drill & Bore Tools



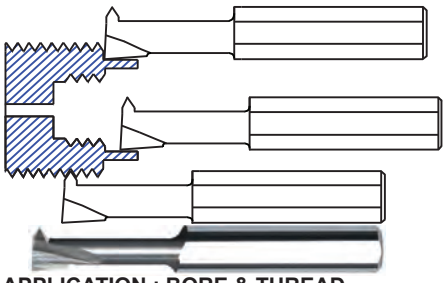
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SERIES 48 Bore & Groove Tools



APPLICATION : BORE & GROOVE WITH THE SAME TOOL page 14

SERIES 50 Bore & Thread Tools



APPLICATION : BORE & THREAD WITH THE SAME TOOL page 14

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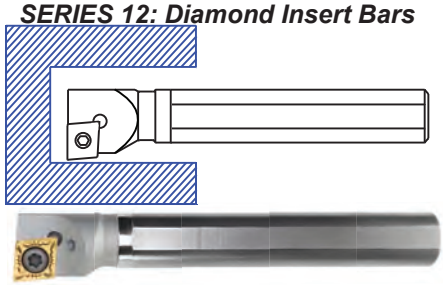
INTERNAL TOOL INC

SERIES 93: Carbide Reamers



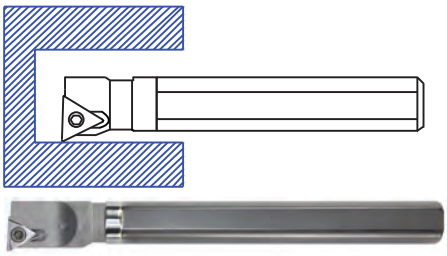
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SERIES 12: Diamond Insert Bars



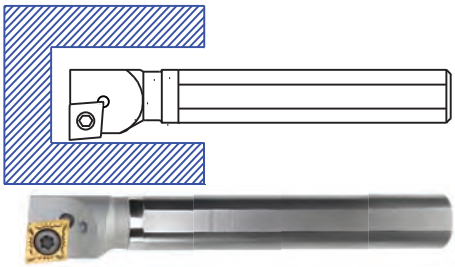
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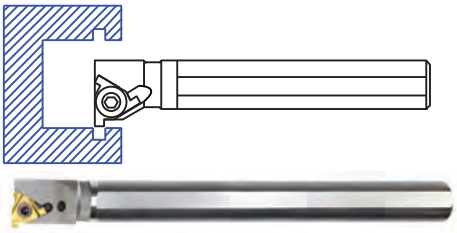
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SERIES 16: Diamond Insert Bars



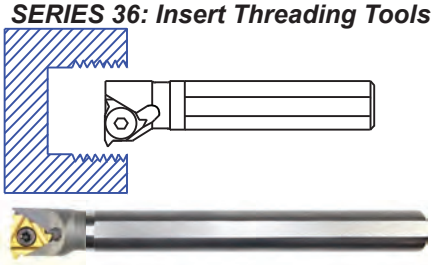
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SERIES 26: Insert Grooving Tools



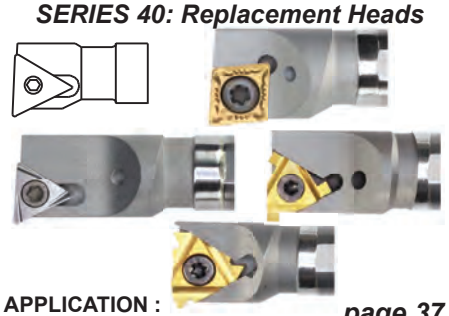
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SERIES 36: Insert Threading Tools



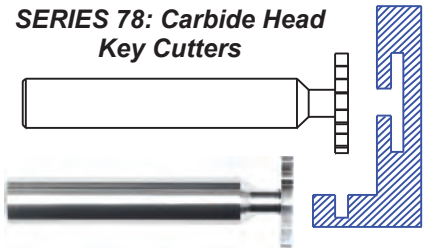
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APPLICATION : HEADS & SCREWS page 37

SERIES 78: Carbide Head Key Cutters



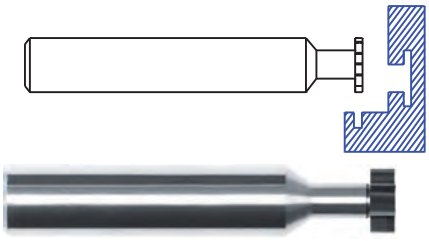
APPLICATION : SLOTTING & GROOVING page 80-83

SERIES 76: Carbide Key Cutters for Soft Material



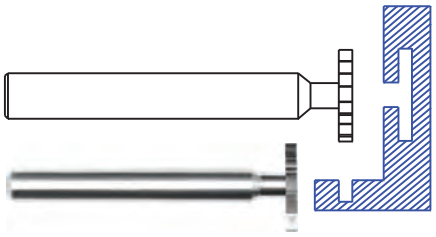
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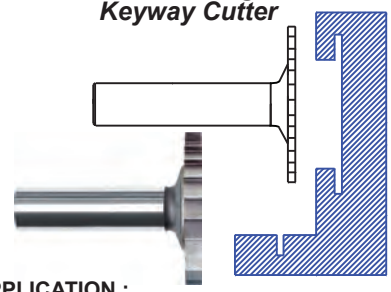
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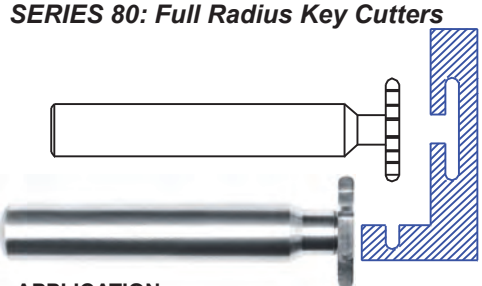
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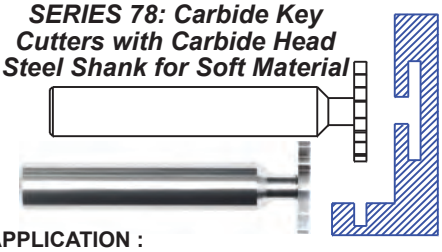
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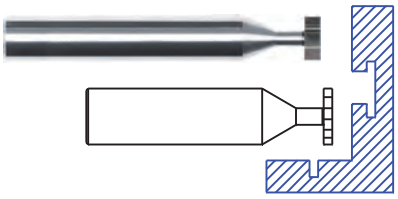
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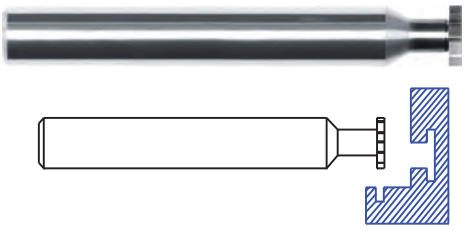
APPLICATION : SLOTTING & GROOVING SOFT MATERIAL, ALUMINUM, BRASS, PLASTIC, ETC. page 80-83

SERIES 57: Deep Slotting Key Cutters



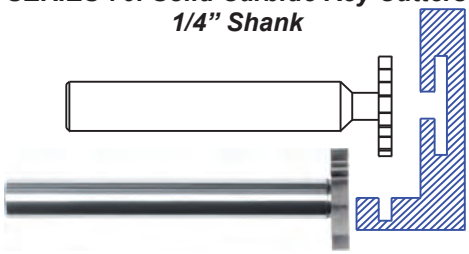
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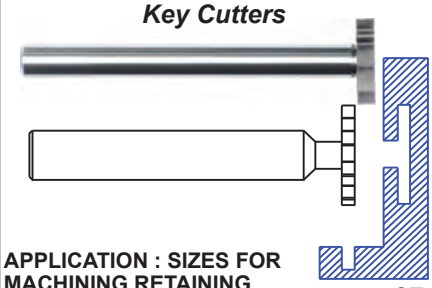
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SERIES 76: Solid Carbide Key Cutters 1/4" Shank



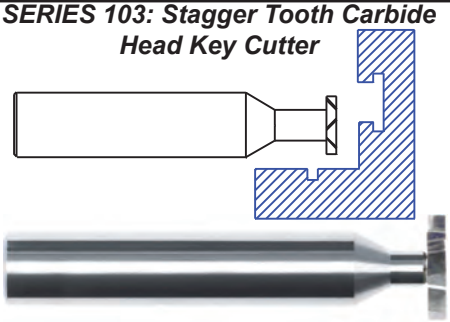
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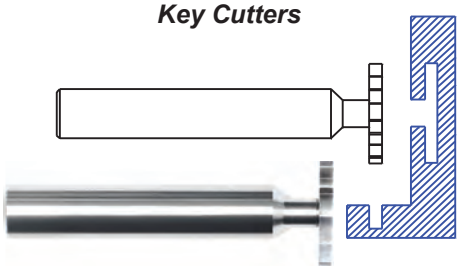
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SERIES 103: Stagger Tooth Carbide Head Key Cutter



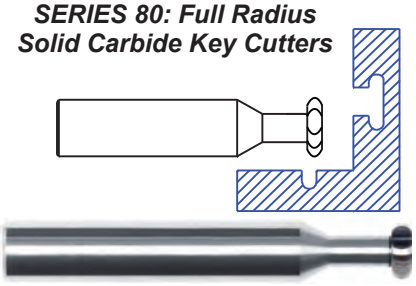
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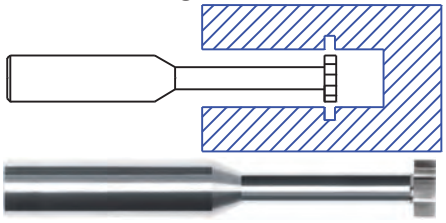
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SERIES 80: Full Radius Solid Carbide Key Cutters



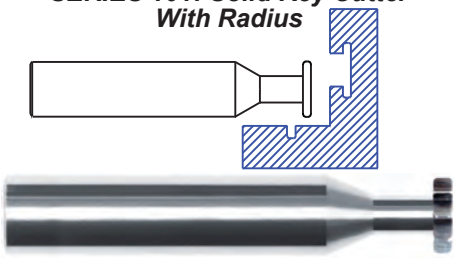
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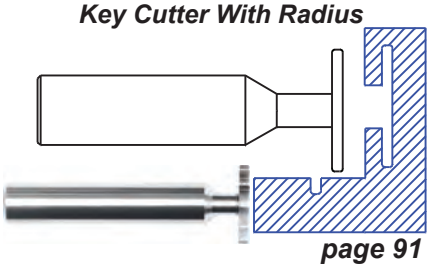
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SERIES 101: Solid Key Cutter With Radius



APPLICATION : CORNER RADIUS page 90

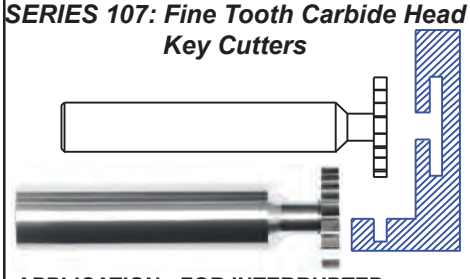
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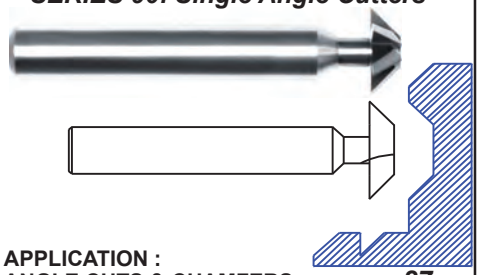
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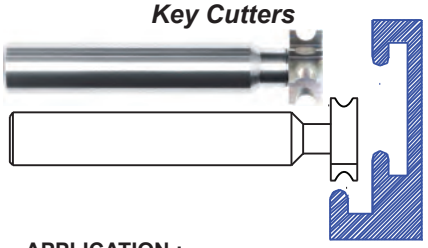
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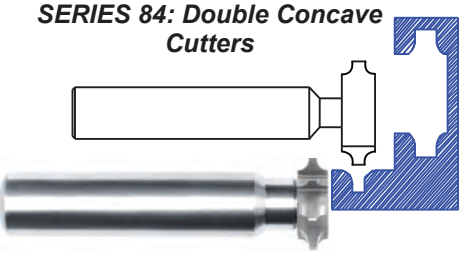
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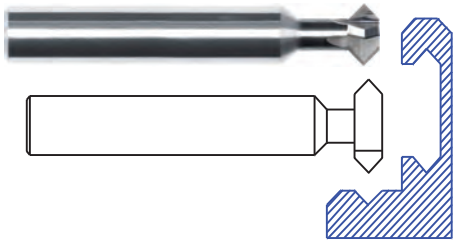
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SERIES 84: Double Concave Cutters



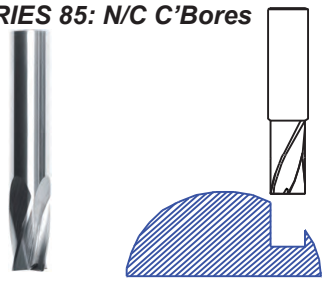
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APPLICATION : ANGLES & CHAMFERS page 102-103

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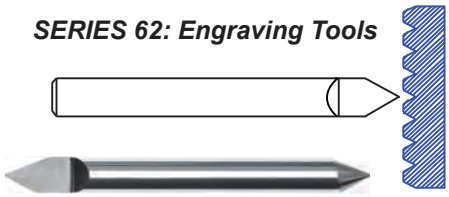


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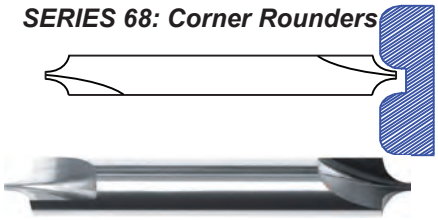
INTERNAL TOOL INC

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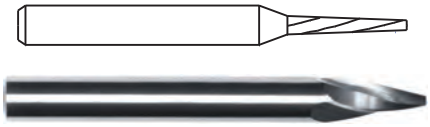
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SERIES 68: Corner Rounders



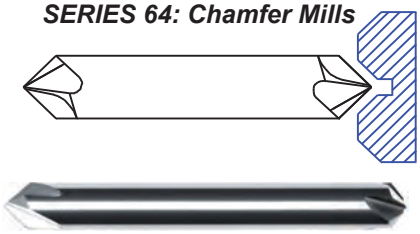
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SERIES 69: Tapered Endmills



APPLICATION : TAPERED MILLING page 57

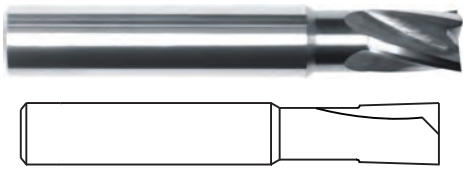
SERIES 64: Chamfer Mills



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APPLICATION : MILLING ANGLES & CHAMFERS

SERIES 45: Back Draft Endmills With/ Without Radius



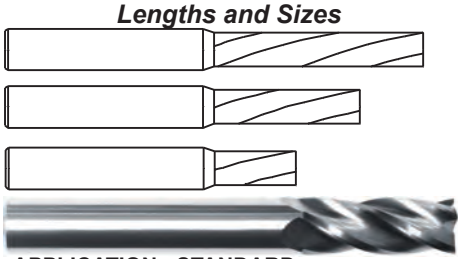
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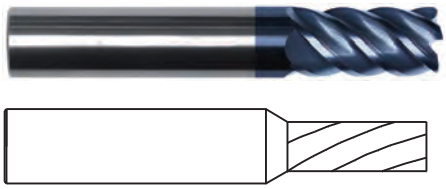
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SERIES 41: Endmills in Special Lengths and Sizes



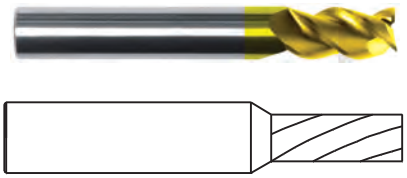
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SERIES 136: High Performance Endmill



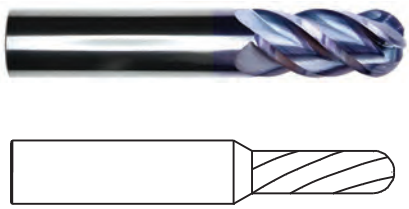
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SERIES 126: Aluminum Endmill



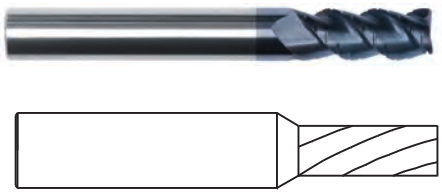
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SERIES 116: Ball Endmill



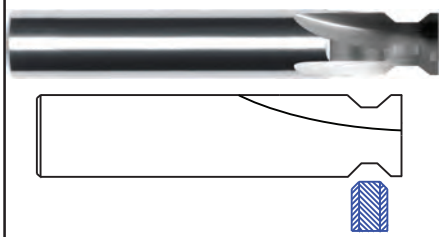
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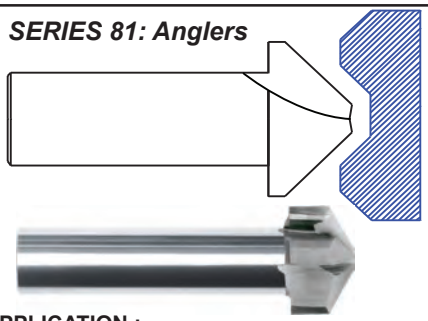
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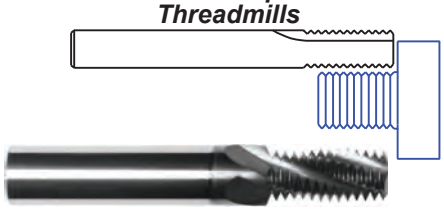
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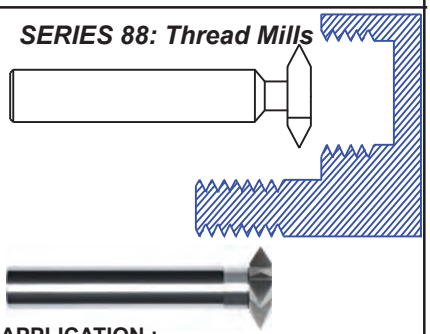
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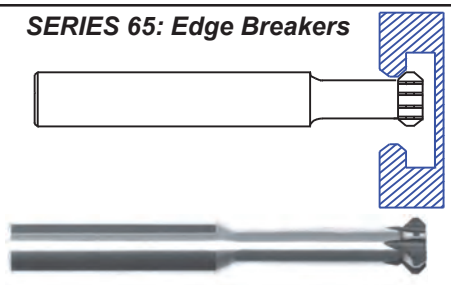
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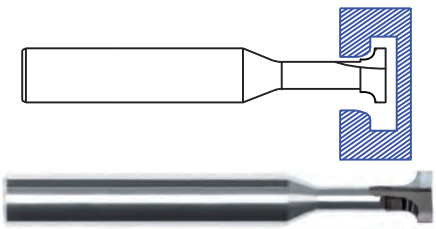
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SERIES 65: Edge Breakers



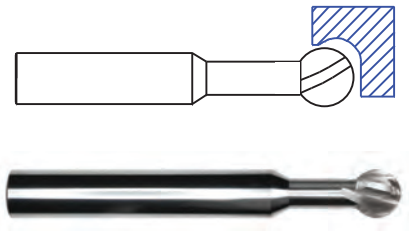
APPLICATION : EDGE BREAKING / CHAMFERING page 64

SERIES 67: Reverse Corner Rounders



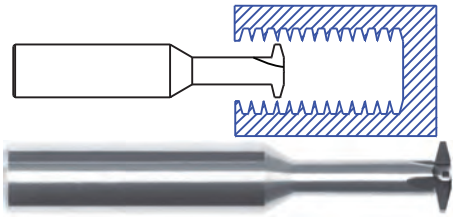
APPLICATION : ROUNDING BACK OR INSIDE CORNERS page 65

SERIES 29: LolliPop Cutters



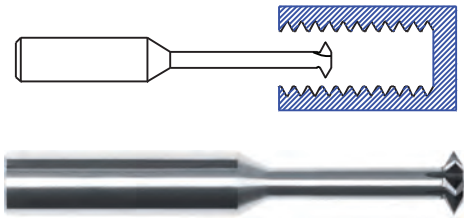
APPLICATION : PROFILE MILLING page 101

SERIES 35: ACME/ STUB ACME Thread Mill



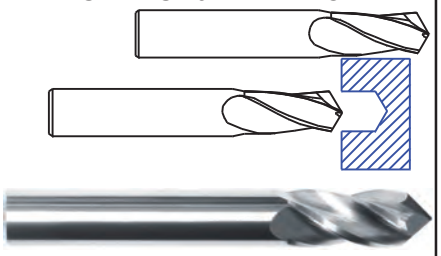
APPLICATION : ACME THREAD MILLING page 106

SERIES 88: Mini Threadmills



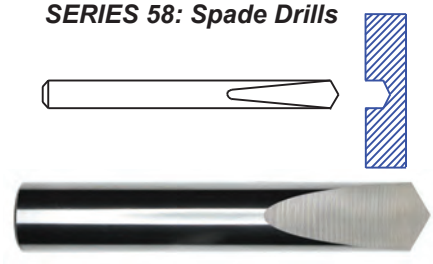
APPLICATION : THREAD MILLING SMALL PARTS page 104

SERIES 49: Drill-Mills



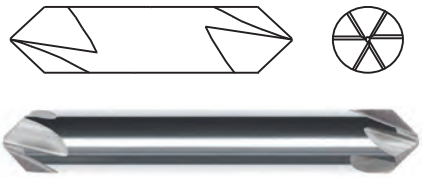
APPLICATION : DRILL & MILL WITH THE SAME TOOL page 53-54

SERIES 58: Spade Drills



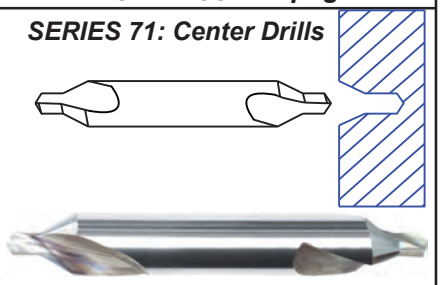
APPLICATION : DRILLING HARD MATERIALS page 56

SERIES 63: Countersinks



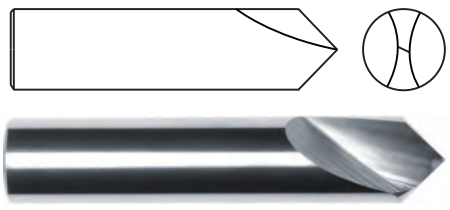
APPLICATION : COUNTERSINKING page 49

SERIES 71: Center Drills



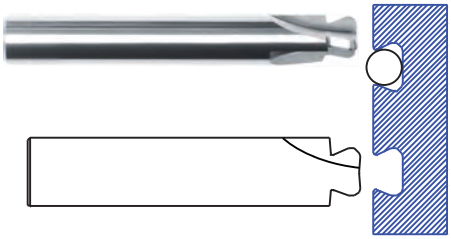
APPLICATION : CENTER DRILLING page 56

SERIES 75: Spotting Drills



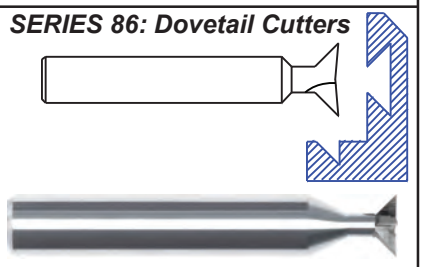
APPLICATION : CENTER DRILLING-C'SINK page 56

SERIES 51: O-Ring Dovetail Cutters



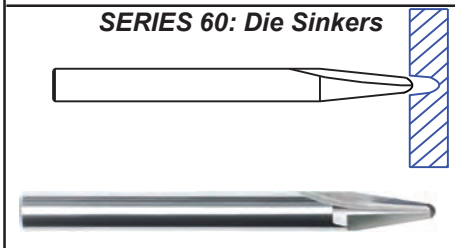
APPLICATION : FACE GROOVE DOVETAILS page 95

SERIES 86: Dovetail Cutters



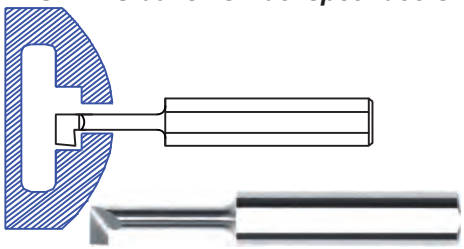
APPLICATION : DOVETAIL SLOTS & CHAMFERS page 96-99

SERIES 60: Die Sinkers



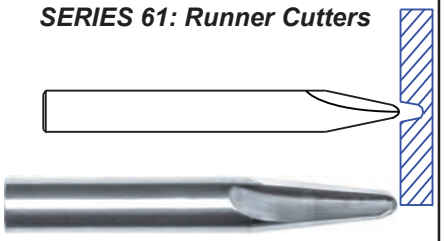
APPLICATION : TAPERED BALL MILLING page 49

SERIES 66: CNC Backspot Facers



APPLICATION : CNC BACK SPOT FACING page 64

SERIES 61: Runner Cutters



APPLICATION : MACHINING RUNNERS IN MOLDS page 49

BORING TOOLS

SERIES 10 STANDARD CARBIDE BORING TOOLS

APPLICATION: GENERAL PURPOSE BORING TOOL FOR BORING ALL TYPES OF MATERIALS

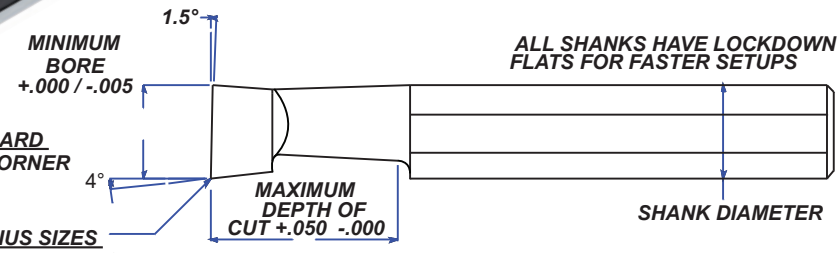
New!

NOW AVAILABLE WITH CORNER RADIUS AND COATED



COATINGS ARE AVAILABLE
ALTIN FOR STEEL ADD "-A" TO EDP #
TIN FOR ALUMINUM ADD "-T" TO EDP #

Example: 10-1000-A = B-050-150 RADIUS ALTIN COATED



WITH TIP RADIUS SIZES
1/8 SHANK .003/.005 RADIUS
3/16 TO 1/2 SHANK .005/.008 RADIUS

TAPERED NECK AND FILLET RADIUS PROVIDE MAXIMUM RIGIDITY

MIN BORE	MAXIMUM DEPTH	EDP# SHARP CORNER	EDP# WITH RADIUS	TOOL ID #	SHANK & OVERALL LENGTH
.050	.150	10-1000	10-1000-R	B-050-150	1/8 x 2"
	.200	10-1005	10-1005-R	B-050-200	
	.300	10-1010	10-1010-R	B-050-300	
	.400	10-1015	10-1015-R	B-050-400	
.060	.150	10-1020	10-1020-R	B-060-150	1/8 x 2"
	.200	10-1025	10-1025-R	B-060-200	
	.300	10-1030	10-1030-R	B-060-300	
	.400	10-1035	10-1035-R	B-060-400	
	.500	10-1040	10-1040-R	B-060-500	
.080	.150	10-1045	10-1045-R	B-080-150	1/8 x 2"
	.200	10-1050	10-1050-R	B-080-200	
	.300	10-1055	10-1055-R	B-080-300	
	.400	10-1060	10-1060-R	B-080-400	
	.500	10-1065	10-1065-R	B-080-500	
	.600	10-1070	10-1070-R	B-080-600	
.100	.150	10-1075	10-1075-R	B-100-150	1/8 x 2"
	.200	10-1080	10-1080-R	B-100-200	
	.300	10-1085	10-1085-R	B-100-300	
	.400	10-1090	10-1090-R	B-100-400	
	.500	10-1095	10-1095-R	B-100-500	
	.600	10-1100	10-1100-R	B-100-600	
	.700	10-1105	10-1105-R	B-100-700	
.110	.150	10-1110	10-1110-R	B-110-150	1/8 x 2"
	.200	10-1115	10-1115-R	B-110-200	
	.300	10-1120	10-1120-R	B-110-300	
	.400	10-1125	10-1125-R	B-110-400	
	.500	10-1130	10-1130-R	B-110-500	
	.600	10-1135	10-1135-R	B-110-600	
	.700	10-1140	10-1140-R	B-110-700	
.120	.250	10-1145	10-1145-R	B-120-250	3/16 x 2-1/2"
	.350	10-1150	10-1150-R	B-120-350	
	.500	10-1155	10-1155-R	B-120-500	
	.600	10-1160	10-1160-R	B-120-600	
	.700	10-1165	10-1165-R	B-120-700	
	.800	10-1170	10-1170-R	B-120-800	

MIN BORE	MAXIMUM DEPTH	EDP# SHARP CORNER	EDP# WITH RADIUS	TOOL ID #	SHANK & OVERALL LENGTH
.140	.250	10-1175	10-1175-R	B-140-250	3/16 x 2-1/2"
	.400	10-1180	10-1180-R	B-140-400	
	.500	10-1185	10-1185-R	B-140-500	
	.600	10-1190	10-1190-R	B-140-600	
	.700	10-1195	10-1195-R	B-140-700	
	.750	10-1200	10-1200-R	B-140-750	
	.800	10-1205	10-1205-R	B-140-800	
.160	.250	10-1210	10-1210-R	B-160-250	3/16 x 2-1/2"
	.400	10-1215	10-1215-R	B-160-400	
	.500	10-1220	10-1220-R	B-160-500	
	.600	10-1225	10-1225-R	B-160-600	
	.750	10-1230	10-1230-R	B-160-750	
	.900	10-1235	10-1235-R	B-160-900	
	1.000	10-1240	10-1240-R	B-160-1000	
.180	.350	10-1245	10-1245-R	B-180-350	1/4 x 2-1/2"
	.500	10-1250	10-1250-R	B-180-500	
	.600	10-1255	10-1255-R	B-180-600	
	.750	10-1260	10-1260-R	B-180-750	
	.900	10-1265	10-1265-R	B-180-900	
	1.000	10-1270	10-1270-R	B-180-1000	
	1.100	10-1275	10-1275-R	B-180-1100	
.200	.400	10-1280	10-1280-R	B-200-400	1/4 x 2-1/2"
	.500	10-1285	10-1285-R	B-200-500	
	.600	10-1290	10-1290-R	B-200-600	
	.700	10-1295	10-1295-R	B-200-700	
	.800	10-1300	10-1300-R	B-200-800	
	.900	10-1305	10-1305-R	B-200-900	
	1.000	10-1310	10-1310-R	B-200-1000	
	1.100	10-1315	10-1315-R	B-200-1100	
	1.200	10-1320	10-1320-R	B-200-1200	
	1.300	10-1325	10-1325-R	B-200-1300	

ALL TOOLS ON THIS PAGE ARE AVAILABLE IN LEFT HAND ADD -LH TO EDP NUMBER WHEN ORDERING Example : 10-1630-LH

ITI CARBIDE: FOR THE HIGHEST PRODUCTION

ITI Carbide Cutting Tools

General Cutting Tools

SERIES 10 STANDARD CARBIDE BORING TOOLS

APPLICATION: GENERAL PURPOSE BORING TOOL FOR BORING ALL TYPES OF MATERIALS

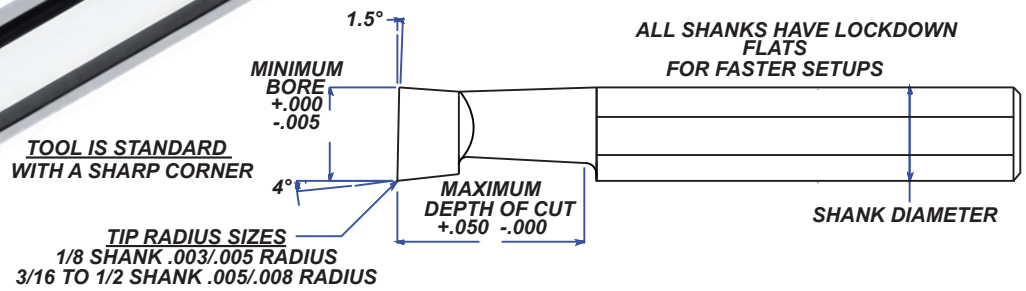
New!

NOW AVAILABLE WITH CORNER RADIUS'S AND COATED

COATINGS ARE AVAILABLE
ALTIN FOR STEEL ADD "-A" TO EDP #
TIN FOR ALUMINUM ADD "-T" TO EDP #

Example: 10-1000-A = B-050-150 RADIUS ALTIN COATED





TAPERED NECK AND FULL RADIUS PROVIDE MAXIMUM RIGIDITY

MIN BORE	MAXIMUM DEPTH	EDP# SHARP CORNER	EDP# WITH RADIUS	TOOL ID #	SHANK & OVERALL LENGTH
.230	.400	10-1330	10-1330-R	B-230-400	5/16 x 2-1/2"
	.500	10-1335	10-1335-R	B-230-500	
	.600	10-1340	10-1340-R	B-230-600	
	.700	10-1345	10-1345-R	B-230-700	
	.800	10-1350	10-1350-R	B-230-800	
	.900	10-1355	10-1355-R	B-230-900	
	1.000	10-1360	10-1360-R	B-230-1000	
	1.150	10-1365	10-1365-R	B-230-1150	
	1.200	10-1370	10-1370-R	B-230-1200	
	1.250	10-1375	10-1375-R	B-230-1250	
	1.400	10-1380	10-1380-R	B-230-1400	
	1.500	10-1385	10-1385-R	B-230-1500	
	1.600	10-1390	10-1390-R	B-230-1600	
.290	.500	10-1395	10-1395-R	B-290-500	5/16 x 2-1/2"
	.600	10-1400	10-1400-R	B-290-600	
	.750	10-1405	10-1405-R	B-290-750	
	.900	10-1410	10-1410-R	B-290-900	
	1.000	10-1415	10-1415-R	B-290-1000	
	1.100	10-1420	10-1420-R	B-290-1100	
	1.250	10-1425	10-1425-R	B-290-1250	
	1.350	10-1430	10-1430-R	B-290-1350	
	1.500	10-1435	10-1435-R	B-290-1500	
	1.600	10-1440	10-1440-R	B-290-1600	
	1.750	10-1445	10-1445-R	B-290-1750	
.320	.500	10-1450	10-1450-R	B-320-500	3/8 x 2-1/2"
	.600	10-1455	10-1455-R	B-320-600	
	.750	10-1460	10-1460-R	B-320-750	
	.900	10-1465	10-1465-R	B-320-900	
	1.000	10-1470	10-1470-R	B-320-1000	
	1.100	10-1475	10-1475-R	B-320-1100	
	1.250	10-1480	10-1480-R	B-320-1250	
	1.500	10-1485	10-1485-R	B-320-1500	
	1.600	10-1490	10-1490-R	B-320-1600	
	1.800	10-1495	10-1495-R	B-320-1800	
.320	2.000	10-1500	10-1500-R	B-320-2000	3/8 x 4.0
	2.500	10-1505	10-1505-R	B-320-2500	
	3.000	10-1510	10-1510-R	B-320-3000	

MIN BORE	MAXIMUM DEPTH	EDP# SHARP CORNER	EDP# WITH RADIUS	TOOL ID #	SHANK & OVERALL LENGTH
.360	.500	10-1515	10-1515-R	B-360-500	3/8 x 2-1/2"
	.600	10-1520	10-1520-R	B-360-600	
	.750	10-1525	10-1525-R	B-360-750	
	.900	10-1530	10-1530-R	B-360-900	
	1.000	10-1535	10-1535-R	B-360-1000	
	1.150	10-1540	10-1540-R	B-360-1150	
	1.250	10-1545	10-1545-R	B-360-1250	
	1.500	10-1550	10-1550-R	B-360-1500	
	1.600	10-1555	10-1555-R	B-360-1600	
	1.800	10-1560	10-1560-R	B-360-1800	
.360	2.000	10-1565	10-1565-R	B-360-2000	3/8 x 4"
	2.500	10-1570	10-1570-R	B-360-2500	
	3.000	10-1575	10-1575-R	B-360-3000	
.490	.750	10-1580	10-1580-R	B-490-750	1/2 x 3"
	1.000	10-1585	10-1585-R	B-490-1000	
	1.250	10-1590	10-1590-R	B-490-1250	
	1.500	10-1595	10-1595-R	B-490-1500	
.490	2.000	10-1600	10-1600-R	B-490-2000	1/2 x 4"
	2.500	10-1605	10-1605-R	B-490-2500	
	2.600	10-1610	10-1610-R	B-490-2600	
.490	3.000	10-1615	10-1615-R	B-490-3000	1/2 x 6"
	3.500	10-1620	10-1620-R	B-490-3500	
	4.000	10-1625	10-1625-R	B-490-4000	
	4.500	10-1630	10-1630-R	B-490-4500	

ALL TOOLS ON THIS PAGE ARE AVAILABLE IN LEFT HAND ADD -LH TO EDP NUMBER WHEN ORDERING Example : 10-1630-LH

PROUDLY MADE IN THE USA

BORING TOOLS

SERIES 18 SOLID CARBIDE MAX BORING TOOLS

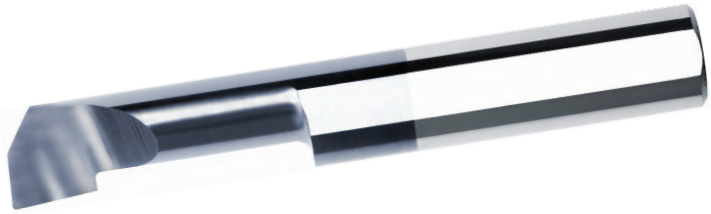
APPLICATION : BORING TOUGH MATERIALS STAINLESS, TITANIUM, 4140, 4340, D2, NICKEL, MONEL, INCONEL ETC.

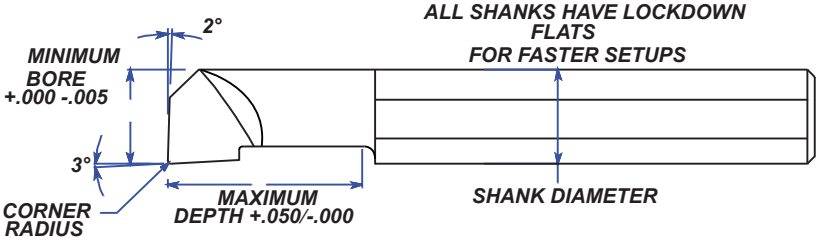
New Sizes Available!

ALTIN COATED
GROUND WITH HELICAL RAKE
ELLIPTICAL NECK FOR GREATER STRENGTH

MAX-BORE BORING TOOLS

Max-Bore is the Ultimate in boring tools. Featuring an elliptical neck for greater strength. A special helical flute for maximum shearing action with a better finish, and a ALTIN coating for a longer life. Max-Bore outperforms and outlasts our competitors boring tools two to one.





MIN BORE	ORDER EDP#	TOOL ID #	MAXIMUM DEPTH	CORNER RADIUS	SHANK & OVERALL LENGTH
.050	18-1000	MB-050-200	.200	.007	1/8 x 2”
	18-1005	MB-050-300	.300		
	18-1010	MB-050-400	.400		
.060	18-1015	MB-060-200	.200	.007	1/8 x 2”
	18-1020	MB-060-300	.300		
	18-1025	MB-060-400	.400		
	18-1030	MB-060-500	.500		
.080	18-1035	MB-080-200	.200	.007	1/8 x 2”
	18-1040	MB-080-300	.300		
	18-1045	MB-080-400	.400		
	18-1050	MB-080-500	.500		
	18-1055	MB-080-600	.600		
.090	18-1060	MB-090-400	.400	.007	1/8 x 2”
	18-1065	MB-090-500	.500		
	18-1070	MB-090-600	.600		
.100	18-1075	MB-100-300	.300	.007	1/8 x 2”
	18-1080	MB-100-400	.400		
	18-1085	MB-100-500	.500		
	18-1090	MB-100-600	.600		
	18-1095	MB-100-700	.700		
.110	18-1100	MB-110-300	.300	.007	1/8 x 2”
	18-1105	MB-110-400	.400		
	18-1110	MB-110-500	.500		
	18-1115	MB-110-600	.600		
	18-1120	MB-110-700	.700		
.120	18-1125	MB-120-400	.400	.007	1/8 x 2”
	18-1130	MB-120-500	.500		
	18-1135	MB-120-600	.600		
	18-1140	MB-120-700	.700		
	18-1145	MB-140-800	.800		
.140	18-1150	MB-140-400	.400	.007	3/16 x 2-1/2”
	18-1155	MB-140-500	.500		
	18-1160	MB-140-600	.600		
	18-1165	MB-140-700	.700		
	18-1170	MB-140-800	.800		
	18-1175	MB-140-900	.900		
	18-1180	MB-140-1000	1.000		
	18-1185	MB-140-1250	1.250		
.160	18-1190	MB-160-500	.500	.007	3/16 x 2-1/2”
	18-1195	MB-160-600	.600		
	18-1200	MB-160-800	.800		
	18-1205	MB-160-1000	1.000		
	18-1210	MB-160-1250	1.250		

MIN BORE	ORDER EDP#	TOOL ID #	MAXIMUM DEPTH	CORNER RADIUS	SHANK & OVERALL LENGTH
.180	18-1212	MB-180-400	.400	.007	3/16 x 2-1/2”
	18-1215	MB-180-500	.500		
	18-1220	MB-180-600	.600		
	18-1225	MB-180-800	.800		
	18-1230	MB-180-1000	1.000		
	18-1235	MB-180-1250	1.250		
	18-1240	MB-180-1500	1.500		
.200	18-1242	MB-200-400	.400	.007	1/4 x 2-1/2”
	18-1245	MB-200-500	.500		
	18-1250	MB-200-800	.800		
	18-1255	MB-200-1000	1.000		
	18-1260	MB-200-1250	1.250		
	18-1265	MB-200-1500	1.500		
	18-1270	MB-200-1750	1.750		
.240	18-1275	MB-240-500	.500	.007	1/4 x 2-1/2”
	18-1280	MB-240-800	.800		
	18-1285	MB-240-1000	1.000		
	18-1290	MB-240-1250	1.250		
	18-1295	MB-240-1500	1.500		
.290	18-1300	MB-290-750	.750	.007	5/16 x 2-1/2”
	18-1305	MB-290-1000	1.000		
	18-1310	MB-290-1250	1.250		
	18-1315	MB-290-1500	1.500		
	18-1320	MB-290-1750	1.750		
.310	18-1322	MB-310-500	.500	.007	5/16 x 2-1/2”
	18-1325	MB-310-750	.750		
	18-1330	MB-310-1000	1.000		
	18-1335	MB-310-1250	1.250		
	18-1340	MB-310-1500	1.500		
	18-1345	MB-310-1750	1.750		
.360	18-1350	MB-360-500	.500	.015	3/8 x 2-1/2”
	18-1355	MB-360-750	.750		
	18-1360	MB-360-1000	1.000		
	18-1365	MB-360-1250	1.250		
	18-1370	MB-360-1500	1.500		
.490	18-1375	MB-490-750	.750	.015	1/2 x 3”
	18-1380	MB-490-1000	1.000		
	18-1385	MB-490-1250	1.250		
	18-1390	MB-490-1500	1.500		

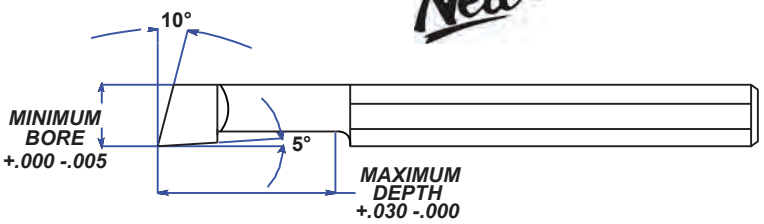
Carbide Cutting Tools

SERIES 91 PLASTIC CUTTING BORING TOOLS

APPLICATION: CLEARANCE AND RELIEF ANGLES FOR CUTTING PLASTIC

MIN BORE	OREDER EDP #	MAX DEPTH	SHANK & OVERALL LENGTH
.120	91-1000	.250	1/8 x 2”
	91-1010	.500	
	91-1020	.800	
.180	91-1030	.500	3/16 x 2-1/2”
	91-1040	.750	
	91-1050	1.250	
.240	91-1060	.500	1/4 x 2-1/2”
	91-1070	.750	
	91-1080	1.250	
.370	91-1090	.500	3/8 x 2-1/2”
	91-1100	.750	
	91-1110	1.250	
.490	91-1120	.750	1/2 x 3”
	91-1130	1.000	
	91-1140	1.500	

New!





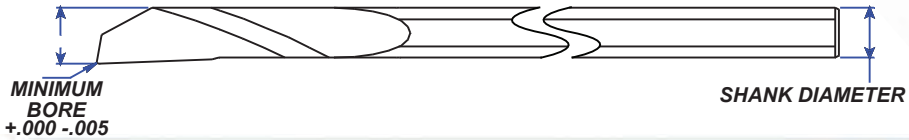
SERIES 04 MULTI-REACH BORING TOOLS

APPLICATION : MULTI-REACH BORING NO LONGER LIMITED BY NECK LENGTH. ONE TOOL REPLACES A SERIES OF OTHERS.

MIN BORE	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	CORNER RADIUS	SHANK LENGTH
.220	04-1095	04-1095-C	3/16”	.005	4”
.280	04-1100	04-1100-C	1/4”	.007	4”
.350	04-1110	04-1110-C	5/16”	.007	4”
.420	04-1120	04-1120-C	3/8”	.010	6”
.560	04-1130	04-1130-C	1/2	.010	6”
.700	04-1140	04-1140-C	5/8”	.015	6”



SOLID CARBIDE SHANKS PROVIDE MAXIMUM RIGIDITY.

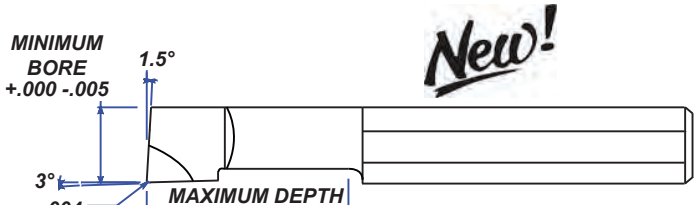


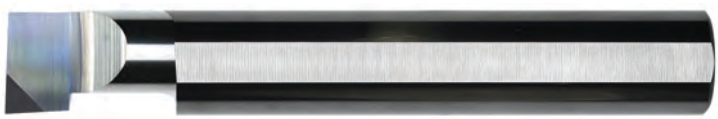
SERIES 108 CBN AND PCD TIPPED BORING TOOLS

APPLICATION : CBN FOR HARD FERROUS MATERIALS 45 RC AND HARDER. PCD FOR ABRASIVE NON FERROUS MATERIALS.

MIN BORE	CBN EDP #	PCD EDP #	MAX DEPTH	SHANK & OVERALL LENGTH
.120	108-1000	108-5000	.250	1/8 x 2”
	108-1050	108-5050	.500	
	108-1100	108-5100	.800	
.180	108-1150	108-5150	.500	3/16 x 2-1/2”
	108-1200	108-5200	.750	
	108-1250	108-5200	1.250	
.240	108-1300	108-5250	.500	1/4 x 2-1/2”
	108-1350	108-5300	.750	
	108-1400	108-5350	1.250	
.370	108-1450	108-5450	.500	3/8 x 2-1/2”
	108-1500	108-5500	.750	
	108-1550	108-5550	1.250	
.490	108-1600	108-5600	.750	1/2 x 3”
	108-1650	108-5650	1.000	
	108-1700	108-5700	1.500	

New!





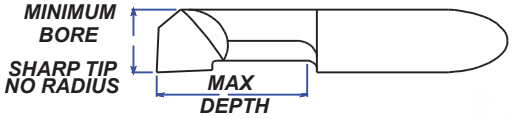
BORING TOOLS

SERIES 42 QUICK CHANGE BORING TOOLS

APPLICATION: QUICK CHANGE, REPLACE TOOLS QUICKLY AND ACCURATELY



ALL THE DETAIL AND QUALITY FROM OUR STANDARD LINE
LESS EXPENSIVE QUICK CHANGE STYLE
NEW FEATURE - AXIAL RAKE FOR FASTER FREER CUTTING





MIN BORE	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #
.030	.100	42-0980	42-0980-C
	.150	42-0985	42-0985-C
.040	.200	42-0990	42-0990-C
	.300	42-0995	42-0995-C
.050	.200	42-1000	42-1000-C
	.300	42-1005	42-1005-C
.060	.200	42-1010	42-1010-C
	.300	42-1015	42-1015-C
	.400	42-1020	42-1020-C
	.500	42-1025	42-1025-C
.080	.200	42-1030	42-1030-C
	.300	42-1035	42-1035-C
	.400	42-1040	42-1040-C
	.500	42-1045	42-1045-C
.100	.200	42-1050	42-1050-C
	.300	42-1055	42-1055-C
	.400	42-1060	42-1060-C
	.500	42-1065	42-1065-C
	.600	42-1070	42-1070-C
	.700	42-1075	42-1075-C
.120	.200	42-1080	42-1080-C
	.300	42-1085	42-1085-C
	.400	42-1090	42-1090-C
	.500	42-1095	42-1095-C
	.600	42-1100	42-1100-C
	.700	42-1105	42-1105-C

MIN BORE	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #
.140	.200	42-1110	42-1110-C
	.300	42-1115	42-1115-C
	.400	42-1120	42-1120-C
	.500	42-1125	42-1125-C
	.600	42-1130	42-1130-C
	.700	42-1135	42-1135-C
.160	.200	42-1140	42-1140-C
	.300	42-1145	42-1145-C
	.400	42-1150	42-1150-C
	.500	42-1155	42-1155-C
	.600	42-1160	42-1160-C
	.700	42-1165	42-1165-C
	.800	42-1170	42-1170-C
	.900	42-1175	42-1175-C
	1.000	42-1180	42-1180-C
	1.100	42-1185	42-1185-C
.180	.200	42-1190	42-1190-C
	.300	42-1195	42-1195-C
	.400	42-1200	42-1200-C
	.500	42-1205	42-1205-C
	.600	42-1210	42-1210-C
	.700	42-1215	42-1215-C
	.800	42-1220	42-1220-C
	.900	42-1225	42-1225-C
	1.000	42-1230	42-1230-C
	1.100	42-1235	42-1235-C

QUICK CHANGE HOLDERS

HOLDERS ARE AVAILABLE WITH 3/8, 1/2, 5/8, & 3/4 SHANK SIZES.
STANDARD STYLE
3/8" SHANK EDP# 42-9000
1/2" SHANK EDP# 42-9005
5/8" SHANK EDP# 42-9010
3/4" SHANK EDP# 42-9015
22 MM SHANK EDP# 42-9020

COOLANT HOLE STYLE
SHANK EDP #42-9500 3/8"
SHANK EDP #42-9505 1/2"
SHANK EDP #42-9510 5/8"
SHANK EDP #42-9515 3/4"
SHANK EDP #42-9520 22 MM

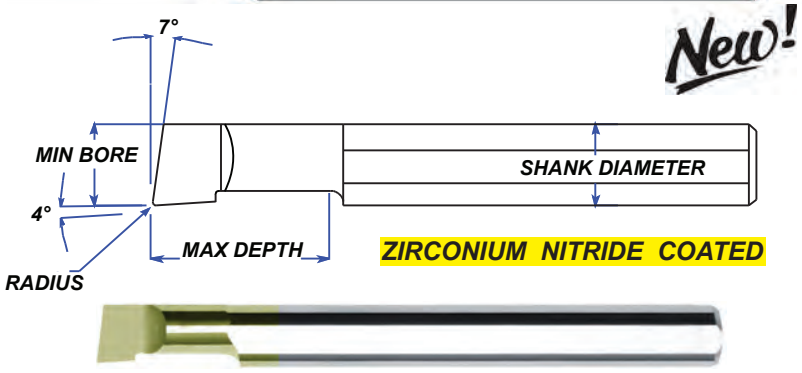
EXTRA SCREW EDP# 42-8888

Quick Change Tools Are Also Available For Grooving, Face Grooving, Threading And, Profiling. See Pages 30-31,39,41, And 51.

SERIES 19 ALUMINUM BORING TOOLS

APPLICATION : CLEARANCE AND RELIEF ANGLES FOR CUTTING ALUMINUM

MIN BORE	ORDER EDP #	MAX DEPTH	CORNER RADIUS	SHANK & OVERALL LENGTH
.120	19-1200	.250	.007	1/8 x 2"
	19-1250	.500		
	19-1290	.800		
.180	19-1300	.500	.007	3/16 x 2-1/2"
	19-1350	.750		
	19-1390	1.250		
.240	19-1400	.500	.007	1/4 x 2-1/2"
	19-1450	.750		
	19-1490	1.250		
.370	19-1500	.500	.015	3/8 x 2-1/2"
	19-1550	.750		
	19-1590	1.250		
.490	19-1600	.750	.015	1/2 x 3"
	19-1650	1.000		
	19-1690	1.500		

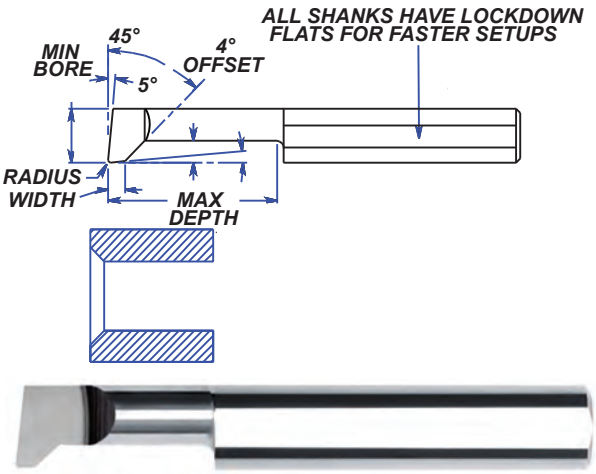


ZIRCONIUM NITRIDE COATED

SERIES 55 BORE & BACK CHAMFER

APPLICATION :
BORE YOUR HOLE THEN MOVE OVER & REMOVE THE BURR ON THE BACKSIDE OF THE HOLE

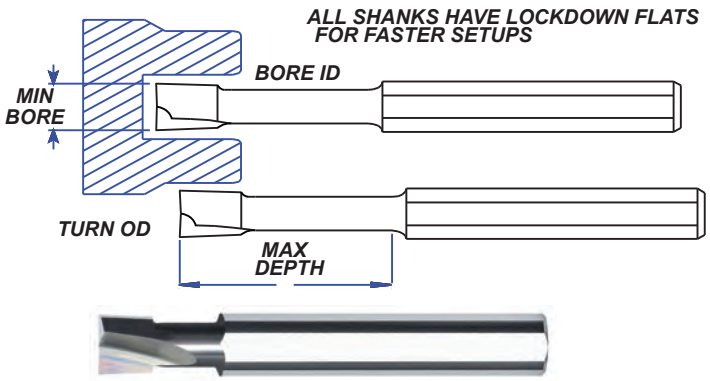
MIN BORE	WIDTH	OFFSET	RADIUS	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	SHANK & OVERALL LENGTH
1/8	.050	.045	.015	.300	55-1100	55-1100-C	1/8 x 2"
				.500	55-1105	55-1105-C	
3/16	.060	.050	.015	.400	55-1110	55-1110-C	3/16 x 2-1/2"
				.800	55-1115	55-1115-C	
1/4	.080	.060	.015	.500	55-1120	55-1120-C	1/4 x 2-1/2"
				1.000	55-1125	55-1125-C	
5/16	.080	.080	.020	.750	55-1130	55-1130-C	5/16 x 2-1/2"
				1.250	55-1135	55-1135-C	
3/8	.100	.120	.020	.750	55-1140	55-1140-C	3/8 x 2-1/2"
				1.250	55-1145	55-1145-C	
1/2	.110	.130	.030	1.000	55-1150	55-1150-C	1/2 x 3"
				1.500	55-1155	55-1155-C	



SERIES 54 DOUBLE EDGE BORING TOOLS

APPLICATION : BORE, AND TURN WITH THE SAME TOOL.

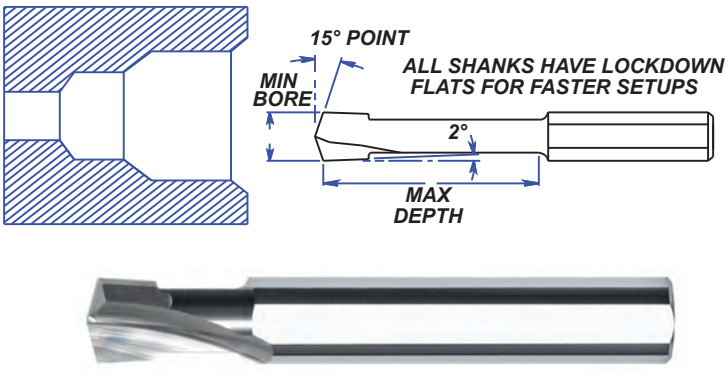
MIN BORE	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	SHANK & OVERALL LENGTH
1/4	.500	54-1100	54-1100-C	DB-240-500	1/4 x 2-1/2"
	.750	54-1105	54-1105-C	DB-240-750	
	1.000	54-1110	54-1110-C	DB-240-1000	
5/16	.500	54-1115	54-1115-C	DB-310-500	5/16 x 2-1/2"
	.750	54-1120	54-1120-C	DB-310-750	
	1.000	54-1125	54-1125-C	DB-310-1000	
3/8	.500	54-1130	54-1130-C	DB-360-500	3/8 x 2-1/2"
	.750	54-1135	54-1135-C	DB-360-750	
	1.000	54-1140	54-1140-C	DB-360-1000	
1/2	.500	54-1145	54-1145-C	DB-490-500	1/2 x 3"
	.750	54-1150	54-1150-C	DB-490-750	
	1.000	54-1155	54-1155-C	DB-490-1000	



SERIES 59 DRILL & BORE TOOLS

APPLICATION : DRILL, BORE, AND TURN ALL WITH THE SAME TOOL. FEATURING A DRILL POINT FOR FASTER, STRAIGHTER CUTTING

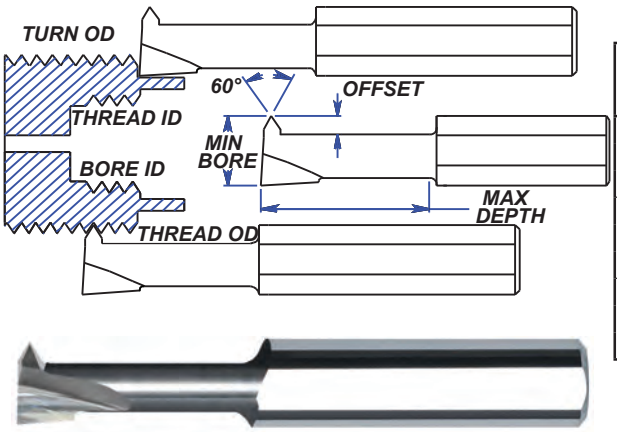
MIN BORE	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	SHANK & OVERALL LENGTH
1/4	.500	59-1200	59-1200-C	DBO-250-500	1/4 x 2-1/2"
	.750	59-1205	59-1205-C	DBO-250-750	
	1.000	59-1210	59-1210-C	DBO-250-1000	
5/16	.500	59-1215	59-1215-C	DBO-312-500	5/16 x 2-1/2"
	.750	59-1220	59-1220-C	DBO-312-750	
	1.000	59-1225	59-1225-C	DBO-312-1000	
3/8	.500	59-1230	59-1230-C	DBO-375-500	3/8 x 2-1/2"
	.750	59-1235	59-1235-C	DBO-375-750	
	1.000	59-1240	59-1240-C	DBO-375-1000	
1/2	.500	59-1245	59-1245-C	DBO-500-500	1/2 x 3"
	.750	59-1250	59-1250-C	DBO-500-750	
	1.000	59-1255	59-1255-C	DBO-500-1000	



BORING TOOLS

SERIES 50 COMBINATION BORE & THREAD

APPLICATION : BORING & THREADING WITH THE SAME TOOL.



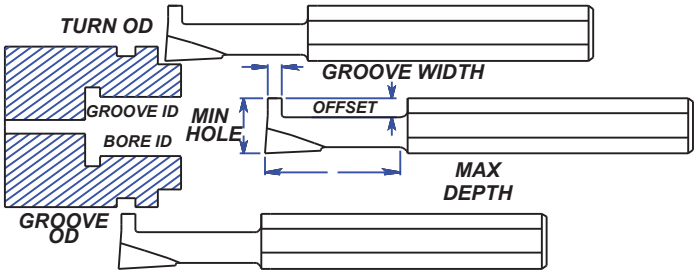
MIN BORE	MAX DEPTH	ORDER EDP #	TOOL ID #	THREAD WIDTH	OFFSET	SHANK & OVERALL LENGTH
1/4	.500	50-1100	CM-240-500	.055	.050	1/4 x 2-1/2
	.750	50-1105	CM-240-750			
	1.000	50-1110	CM-240-1000			
5/16	.500	50-1115	CM-310-500	.065	.060	5/16 x 2-1/2
	.750	50-1120	CM-310-750			
	1.000	50-1125	CM-310-1000			
3/8	.500	50-1130	CM-360-500	.090	.080	3/8 x 2-1/2
	.750	50-1135	CM-360-750			
	1.000	50-1140	CM-360-1000			

SERIES 48 COMBINATION BORE & GROOVE

APPLICATION : BORING & GROOVING WITH THE SAME TOOL.

GROOVE WIDTH CAN BE MODIFIED NO EXTRA CHARGE

MIN BORE	MAX DEPTH	ORDER EDP #	TOOL ID #	GROOVE WIDTH	OFFSET	SHANK & OVERALL LENGTH
1/4	.500	48-1100	BG-240-500	.094	.050	1/4 x 2-1/2
	.750	48-1105	BG-240-750			
	1.000	48-1110	BG-240-1000			
5/16	.500	48-1115	BG-310-500	.125	.060	5/16 x 2-1/2
	.750	48-1120	BG-310-750			
	1.000	48-1125	BG-310-1000			
3/8	.500	48-1130	BG-360-500	.156	.080	3/8 x 2-1/2
	.750	48-1135	BG-360-750			
	1.000	48-1140	BG-360-1000			





SERIES 98 TOOL HOLDER

APPLICATION : A HOLDER THAT WILL HOLD OUR STANDARD SET SCREW FLAT STYLE 1/8" THRU 1/2" DIAMETER SHANK TOOLS.

Series 98 HOLDERS

ORDER EDP #	SHANK STYLE
98-2400	3/4" ROUND
98-2405	1"SQUARE



Series 98 BUSHINGS

ORDER EDP #	SHANK STYLE
98-2450	1/8
98-2455	3/16
98-2460	1/4
98-2465	5/16
98-2470	3/8
98-2475	1/2

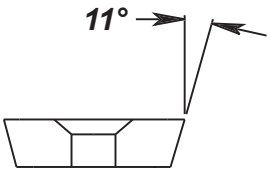
APPLICATION: INDEXABLE INSERT BORING BARS USING TRIANGLE INSERTS

INDEXABLE INSERT TRIANGLE 5/16" BARS - 5/32" I.C.

5/16" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T11-31	1/4	5/32	99-1100	BHF-0203S	1/16	3"	14-1030	14-1033	14-1036
						6"	14-1039	14-1042	14-1045





INSERTS FOR ABOVE BARS - 5/32" INSERT I.C.

CARBIDE GRADE	TIP RADIUS	NUMBER	ORDER EDP #
T2000Z	.007	TBGT-520.5LFW	15-1100
T1200A CERMET	.007	TBGT-520.5LFW	15-1110
AC5104 TIN COATED	.007	TBGT-520.5LFX	15-1120
T1200A CERMET	.015	TBGT-521L	15-1130
AC325 TIN COATED	.015	TBGT-521LFX	15-1140

INDEXABLE INSERT TRIANGLE FOR 3/8" & 7/16" BARS - 3/16 I.C.

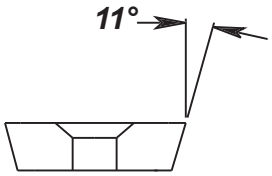
3/8" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T11-37	5/16	3/16	99-1105	BHF-0203B	3/32	3"	14-1048	14-1051	14-1054
						6"	14-1057	14-1060	14-1063

7/16" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T11-43	3/8	3/16	99-1105	BHF-0203B	3/32	3"	14-1066	14-1069	14-1072
						6"	14-1075	14-1078	14-1081





INSERTS FOR ABOVE BARS - 3/16" INSERT I.C.

CARBIDE GRADE	TIP RADIUS	NUMBER	ORDER EDP #
T2000Z	.007	TPGT-630.5L	15-1150
T12A CERMET	.007	TPGT-630.5L	15-1160
AC5104 TIN COATED	.007	TPGT-630.5L	15-1170
T12A CERMET	.015	TPGT-631L	15-1180
AC530U TIN COATED	.015	TPGT-631LFX	15-1190

NOTICE: *INSERT BORING BARS ARE MADE TO ORDER; PLEASE CALL FOR DELIVERY TIME, OTHERWISE THE DELIVERY TIME WILL BE QUOTED IN AN ORDER CONFIRMATION*

ITI CARBIDE: FOR THE HIGHEST PRODUCTION

Carbide Cutting Tools

TRIANGLE INSERT BORING BARS

SERIES 14 INDEXABLE INSERT BORING BARS

APPLICATION: INDEXABLE INSERT BORING BARS USING TRIANGLE INSERTS

1/2" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T11-50	3/8	1/4	99-1110	BHF0306R	1/8	3"	14-1084	14-1087	14-1090
						6"	14-1093	14-1096	14-1099

9/16" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T11-56	1/2	1/4	99-1165	BHF0308R	1/8	3"	14-1102	14-1105	14-1108
						6"	14-1111	14-1114	14-1117
						9"	14-1120	14-1123	14-1126
						12"	14-1129	14-1132	14-1135

5/8" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T11-62	1/2	1/4	99-1165	BHF0308R	1/8	3"	14-1138	14-1141	14-1144
						6"	14-1147	14-1150	14-1153
						9"	14-1156	14-1159	14-1162
						12"	14-1165	14-1168	14-1171

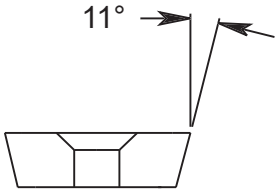
11/16" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T11-68	5/8	1/4	99-1165	BHF0308R	1/8	3"	14-1174	14-1177	14-1180
						6"	14-1183	14-1186	14-1189
						9"	14-1192	14-1195	14-1198
						12"	14-1201	14-1204	14-1207

3/4" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T11-75	5/8	1/4	99-1165	BHF0308R	1/8	3"	14-1210	14-1213	14-1216
						6"	14-1219	14-1222	14-1225
						9"	14-1228	14-1231	14-1234
						12"	14-1237	14-1240	14-1243





INDEXABLE INSERT
TRIANGLE 1/4 I.C.

INSERTS FOR ABOVE BARS - 1/4" INSERT I.C.

CARBIDE GRADE	TIP RADIUS	NUMBER	ORDER EDP #
T130Z CERMET	.007	TPGG-220.5L	15-1200
T2000Z UN-COATED	.007	TPGG-220.5L	15-1210
T2000Z UN-COATED	.015	TPGG-221L	15-1220
T130Z CERMET	.015	TPGG-221L	15-1230

TRIANGLE INSERT BORING BARS

APPLICATION: INDEXABLE INSERT BORING BARS USING TRIANGLE INSERTS



7/8" *MINIMUM BORE*

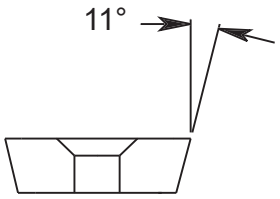
HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T11-87	3/4	3/8	99-1115	BFXO410R	3/16	3"	14-1246	14-1249	14-1252
						6"	14-1255	14-1258	14-1261
						9"	14-1264	14-1267	14-1270
						12"	14-1273	14-1276	14-1279

1" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T11-100	3/4	3/8	99-1115	BFXO410R	3/16	3"	14-1282	14-1285	14-1288
						6"	14-1291	14-1294	14-1297
						9"	14-1300	14-1303	14-1306
						12"	14-1309	14-1312	14-1315

1-1/8" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #
T11-112	1"	3/8	99-1115	BFXO410R	3/16	3"	14-1318	14-1321
						6"	14-1327	14-1330
						9"	14-1336	14-1339
						12"	14-1345	14-1348



INDEXABLE INSERT
TRIANGLE 3/8 I.C.

INSERTS FOR ABOVE BARS - 3/8" INSERT I.C.

CARBIDE GRADE	TIP RADIUS	SUMITOMO NUMBER	ORDER EDP #
G10E C-2	.007	TPGG-330.5L	15-1250
T1200A CERMET	.007	TPGG-330.5L	15-1260
G10E C-2	.015	TPGG-331L	15-1270
AC-200 TIN COATED	.015	TPMT-331ENF	15-1280
EH10Z TIN COATED	.031	TPMT-332ENF	15-1290
AC-2500 TIN COATED	.031	TPMT-332ENF	15-1300
EH-10	.031	TPMT-332ENF	15-1310

NOTICE: *INSERT BORING BARS ARE MADE TO ORDER; PLEASE CALL FOR DELIVERY TIME, OTHERWISE THE DELIVERY TIME WILL BE QUOTED IN AN ORDER CONFIRMATION*

DIAMOND INSERT BORING BARS

SERIES 16 INDEXABLE INSERT BORING BARS

APPLICATION: INDEXABLE INSERT BORING BARS USING 7° DIAMOND INSERTS



3/8" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-37	5/16	1/4	99-1120	S-90	3/32	3"	16-1660	16-1663	16-1666
						6"	16-1669	16-1672	16-1675

7/16" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-43	3/8	1/4	99-1125	S-95	3/32	3"	16-1678	16-1681	16-1684
						6"	16-1687	16-1690	16-1693

1/2" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-50	3/8	1/4	99-1125	S-95	3/32	3"	16-1696	16-1699	16-1702
						6"	16-1708	16-1708	16-1711

9/16" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-56	1/2	1/4	99-1125	S-95	3/32	3"	16-1714	16-1717	16-1720
						6"	16-1723	16-1726	16-1729
						9"	16-1732	16-1735	16-1738
						12"	16-1741	16-1744	16-1747

5/8" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-62	1/2	1/4	99-1125	S-95	3/32	3"	16-1750	16-1753	16-1756
						6"	16-1757	16-1762	16-1765
						9"	16-1768	16-1771	16-1774
						12"	16-1777	16-1780	16-1783

11/16" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-68	5/8	1/4	99-1125	S-95	3/32	3"	16-1786	16-1789	16-1792
						6"	16-1795	16-1798	16-1801
						9"	16-1804	16-1807	16-1810
						12"	16-1813	16-1816	16-1819

3/4" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-75	5/8	1/4	99-1125	S-95	3/32	3"	16-1822	16-1825	16-1828
						6"	16-1831	16-1834	16-1837
						9"	16-1840	16-1843	16-1846
						12"	16-1849	16-1852	16-1855

INSERTS FOR ABOVE BARS - 1/4" INSERT I.C.

CARBIDE INSERT	APPLICATION	GRADE	TIP RADIUS	ORDER EDP #
CCMT 21.51EN-SF	STEEL	CTCP125	0.015	17-1700
CCMT 21.52EN-SMF	STEEL	CTCP125	0.032	17-1710
CCMT 21.51EN-M25	STAINLESS STEEL	CTC2135	0.015	17-1720
CCMT 21.52EN-SMF	STAINLESS STEEL	CTCP125	0.032	17-1730
CCMT 21.51EN-SF	CAST IRON	CTCP125	0.015	17-1740
CCMT 21.52EN-SMF	CAST IRON	CTCP125	0.032	17-1750
CCGT 21.5.5FN-25P	NO FERROUS ALUM.	H210T	0.008	17-1760
CCGT 21.51FN-25P	NO FERROUS ALUM.	H210T	0.015	17-1770
CCGT 21.5.5FN-25P	HIGH TEMP EXOTICS	AMZ	0.008	17-1780
CCGT 21.51FN-25P	HIGH TEMP EXOTICS	AMZ	0.015	17-1790
CCGT 22.5.5 EN CF05	CERMET-FINISHING	CTEP110	0.008	17-1800
CCMT 22.1 EN CF55	CERMET-SEMI FINISH	CTEP110	0.015	17-1810

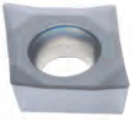
INDEXABLE INSERT
DIAMOND 1/4 I.C.



GENERAL STEEL



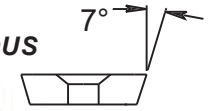
NON FERROUS ALUM.



HIGH TEMP EXOTICS



STAINLESS STEEL



SERIES 16 INDEXABLE INSERT BORING BARS

DIAMOND INSERT BORING BARS

APPLICATION: INDEXABLE INSERT BORING BARS USING 7° DIAMOND INSERTS



5/8" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-62B	1/2	3/8	99-1132	S-98-S	5/32	3"	16-1859	16-1860	16-1862
						6"	16-1863	16-1865	16-1866
						9"	16-1868	16-1869	16-1871
						12"	16-1872	16-1874	16-1875

11/16" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-68B	5/8	3/8	99-1132	S-98-S	5/32	3"	16-1877	16-1878	16-1880
						6"	16-1881	16-1883	16-1884
						9"	16-1886	16-1887	16-1889
						12"	16-1890	16-1892	16-1893

3/4" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-75B	5/8	3/8	99-1132	S-98	5/32	3"	16-1895	16-1896	16-1898
						6"	16-1899	16-1901	16-1902
						9"	16-1904	16-1905	16-1907
						12"	16-1908	16-1910	16-1911

7/8" *MINIMUM BORE*

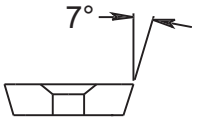
HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-87	3/4	3/8	99-1132	S-98	5/32	3"	16-1858	16-1861	16-1864
						6"	16-1867	16-1870	16-1873
						9"	16-1876	16-1879	16-1882
						12"	16-1885	16-1888	16-1891

1" *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D07-100	3/4	3/8	99-1132	S-98	5/32	3"	16-1894	16-1897	16-1900
						6"	16-1903	16-1906	16-1909
						9"	16-1912	16-1915	16-1918
						12"	16-1921	16-1924	16-1927

1-1/8 *MINIMUM BORE*

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #
D07-112	1"	3/8	99-1132	S-98	5/32	3"	16-1930	16-1933
						6"	16-1939	16-1942
						9"	16-1948	16-1951
						12"	16-1957	16-1960



CCMT 32.51
3/8" I.C.

INSERTS FOR ABOVE BARS 3/8" INSERT I.C.



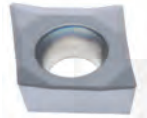
NON FERROUS ALUM.



STAINLESS STEEL



GENERAL STEEL



HIGH TEMP EXOTICS

CARBIDE INSERT	APPLICATION	GRADE	TIP RADIUS	ORDER EDP #
CCMT 32.51EN-SF	STEEL	CTCP125	.015	17-1850
CCMT 32.52EN-SMF	STEEL	CTCP125	.032	17-1860
CCMT 32.51EN-F43	STAINLESS STEEL	CTC2135	.015	17-1870
CCMT 32.52EN-F43	STAINLESS STEEL	CTC2135	.032	17-1880
CCMT 32.51EN-SF	CAST IRON	CTCP125	.015	17-1890
CCMT 32.52EN-SMF	CAST IRON	CTCP125	.032	17-1900
CCMT 32.51FN-25P	ALUMINUM	H210T	.015	17-1910
CCMT 32.52FN-25P	ALUMINUM	H210T	.032	17-1920
CCMT 32.51FN-25P	HIGH TEMP/ EXOTICS	AMZ	.015	17-1930
CCMT 32.52FN-25P	HIGH TEMP/ EXOTICS	AMZ	.032	17-1940
CCMT 32.51 EN CF05	CERMET-FINISHING	CTEP110	.015	17-1950
CCMT 32.52 EN CF55	CERMET-SEMI FINISH	CEPT110	.030	17-1960

ITI CARBIDE: HIGH TRANSVERSE RUPTURE STRENGTH

DIAMOND INSERT BORING BARS

SERIES 12 INDEXABLE INSERT BORING BARS

APPLICATION: INDEXABLE INSERT BORING BARS USING 11° DIAMOND INSERTS

CPMT 21.51 INSERT

3/8" MINIMUM BORE

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
D11-37	5/16	1/4	99-1120	S-90	3/32	3"	12-1660	12-1663	16-1666
						6"	12-1669	12-1672	16-1675

7/16" MINIMUM BORE

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D11-43	3/8	1/4	99-1125	S-95	3/32	3"	12-1678	12-1681	16-1684
						6"	12-1687	12-1690	16-1693

1/2" MINIMUM BORE

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D11-50	3/8	1/4	99-1125	S-95	3/32	3"	12-1696	12-1699	12-1702
						6"	12-1705	12-1708	12-1711

9/16" MINIMUM BORE

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D11-56	1/2	1/4	99-1125	S-95	3/32	3"	12-1714	12-1717	12-1720
						6"	12-1723	12-1726	12-1729
						9"	12-1732	12-1735	12-1738
						12"	12-1741	12-1744	12-1747

5/8" MINIMUM BORE

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D11-62	1/2	1/4	99-1125	S-95	3/32	3"	12-1750	12-1753	12-1756
						6"	12-1759	12-1762	12-1765
						9"	12-1768	12-1771	12-1774
						12"	12-1777	12-1780	12-1783

11/16" MINIMUM BORE

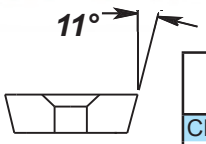
HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D11-68	5/8	1/4	99-1125	S-95	3/32	3"	12-1786	12-1789	12-1792
						6"	12-1795	12-1798	12-1801
						9"	12-1804	12-1807	12-1810
						12"	12-1813	12-1816	12-1819

3/4" MINIMUM BORE

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	STEEL SHANK ORDER EDP #	CARBIDE SHANK ORDER EDP #	CARBIDE WITH COOLANT HOLE ORDER EDP #
D11-75	5/8	1/4	99-1125	S-95	3/32	3"	12-1822	12-1825	12-1828
						6"	12-1831	12-1834	12-1837
						9"	12-1840	12-1843	12-1846
						12"	12-1849	12-1852	12-1855



INDEXABLE INSERT CPMT 21.51 1/4" I.C.



INSERTS FOR ABOVE BARS 1/4" INSERT I.C.

CARBIDE INSERT	APPLICATION	GRADE	TIP RADIUS	ORDER EDP #
CPMT 21.51EN-SF	STEEL	CTCP115	0.015	17-2000
CPMT 21.52EN-SF	STEEL	CTCP115	0.032	17-2010
CPMT 21.51EN-SF	STAINLESS STEEL	CTCP115	0.015	17-2020
CPMT 21.52EN-SF	STAINLESS STEEL	CTCP115	0.032	17-2030
CPMT 21.51EN-SF	CAST IRON	CTCP115	0.015	17-2040
CPMT 21.52EN-SF	CAST IRON	CTCP115	0.032	17-2050



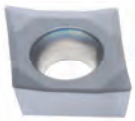
STAINLESS STEEL



NON FERROUS ALUM.



GENERAL STEEL



HIGH TEMP EXOTICS

THE MOST UNIQUE LINE OF CUTTING TOOLS AVAILABLE

Carbide Cutting Tools

SERIES 12 INDEXABLE INSERT BORING BARS

DIAMOND INSERT BORING BARS

APPLICATION: INDEXABLE INSERT BORING BARS USING 11° DIAMOND INSERTS

TOOL GEOMETRY FOR BORING ALUMINUM & SOFTER MATERIALS



CPMT 32.51 INSERT

7/8" MINIMUM BORE

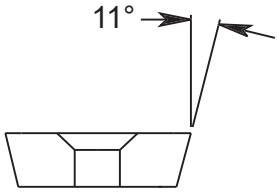
HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
D11-87	3/4	3/8	99-1130	S-98	5/32	3"	12-1858	12-1861	12-1864
						6"	12-1867	12-1870	12-1873
						9"	12-1876	12-1879	12-1882
						12"	12-1885	12-1888	12-1891

1" MINIMUM BORE

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
D11-100	3/4	3/8	99-1130	S-98	5/32	3"	12-1894	12-1897	12-1900
						6"	12-1903	12-1906	12-1909
						9"	12-1912	12-1915	12-1918
						12"	12-1921	12-1924	12-1927

1-1/8" MINIMUM BORE

HEAD I.D.	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW NUMBER	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #
D11-112	1"	3/8	99-1130	S-98	5/32	3"	12-1930	12-1933
						6"	12-1939	12-1942
						9"	12-1948	12-1951
						12"	12-1957	12-1960



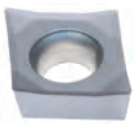
INSERTS FOR ABOVE BARS - 3/8" INSERT I.C.

CARBIDE INSERT	APPLICATION	GRADE	TIP RADIUS	ORDER EDP #
CPMT 31.51ENSF	STEEL	CTCP115	0.015	17-2100
CPMT 31.52ENSF	STEEL	CTCP115	0.032	17-2110
CPMT 31.51ENSF	STAINLESS STEEL	CTCP115	0.015	17-2120
CPMT 31.52ENSF	STAINLESS STEEL	CTCP115	0.032	17-2130
CPMT 31.51ENSF	CAST IRON	CTCP115	0.015	17-2140
CPMT 31.52ENSF	CAST IRON	CTCP115	0.032	17-2150


NON FERROUS ALUM.


STAINLESS STEEL


GENERAL STEEL


HIGH TEMP EXOTICS

NOTICE: *INSERT BORING BARS ARE MADE TO ORDER; PLEASE CALL FOR DELIVERY TIME, OTHERWISE THE DELIVERY TIME WILL BE QUOTED IN AN ORDER CONFIRMATION*

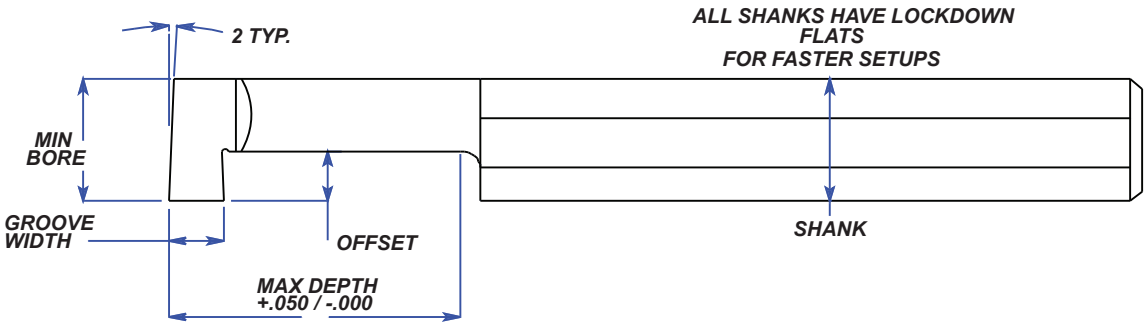
ITI CARBIDE: THE MOST VERSATILE CARBIDE AVAILABLE

Carbide Cutting Tools

SERIES 20 STANDARD GROOVING TOOLS

APPLICATION: FOR RETAINING RING GROOVES & INTERNAL RELIEFS



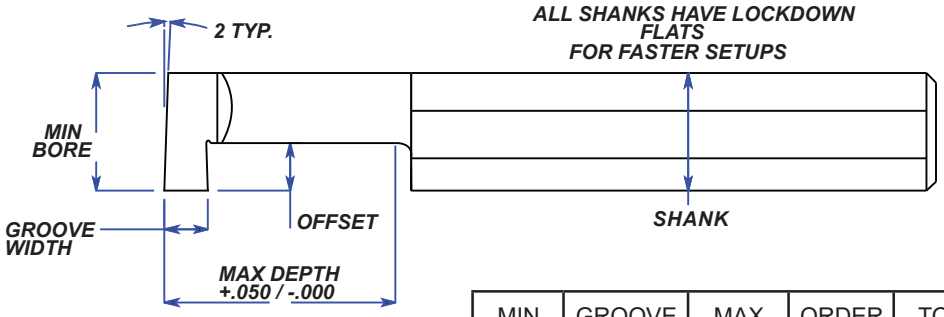


MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	TOOL ID #	OFFSET	SHANK & OVERALL LENGTH
1/16	.031/.032	3/16	20-1170	G-032-3	.020	1/8 x 2”
		1/4	20-1175	G-032-4		
		3/8	20-1180	G-032-6		
3/32	.046/.047	1/4	20-1185	G-047-4	.030	
		3/8	20-1190	G-047-6		
		1/2	20-1195	G-047-8		
1/8	.062/.063	1/4	20-1200	G-064-4	.040	
		3/8	20-1205	G-064-6		
		1/2	20-1210	G-064-8		
		5/8	20-1215	G-064-10		
3/16	.017/.018	1/4	20-1220	G-018-4	.050	3/16 x 2-1/2”
		3/8	20-1225	G-018-6		
		1/2	20-1230	G-018-8		
		5/8	20-1235	G-018-10		
	.025/.026	1/4	20-1240	G-026-4		
		3/8	20-1245	G-026-6		
		1/2	20-1250	G-026-8		
		5/8	20-1255	G-026-10		
	.030/.031	1/4	20-1260	G-031-4		
		3/8	20-1265	G-031-6		
		1/2	20-1270	G-031-8		
		5/8	20-1275	G-031-10		
	.062/.063	1/4	20-1280	G-061-4		
		3/8	20-1285	G-061-6		
		1/2	20-1290	G-061-8		
		5/8	20-1295	G-061-10		

MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	TOOL ID #	OFFSET	SHANK & OVERALL LENGTH
1/4	.017/.018	1/4	20-1300	G-017-4	.050	1/4 x 2-1/2”
		3/8	20-1305	G-017-6		
		1/2	20-1310	G-017-8		
		5/8	20-1315	G-017-10		
	.025/.026	1/4	20-1320	G-025-4		
		3/8	20-1325	G-025-6		
		1/2	20-1330	G-025-8		
		5/8	20-1335	G-025-10		
	.030/.031	1/4	20-1340	G-030-4		
		3/8	20-1345	G-030-6		
		1/2	20-1350	G-030-8		
		5/8	20-1355	G-030-10		
	.062/.064	3/8	20-1356	G-060-6		
		1/2	20-1357	G-060-8		
		5/8	20-1358	G-060-10		
5/16	.033/.034	1/4	20-1360	G-033-4	.100	5/16 x 2-1/2”
		3/8	20-1365	G-033-6		
		1/2	20-1370	G-033-8		
		3/4	20-1375	G-033-12		
	.038/.039	1/4	20-1380	G-038-4		
		3/8	20-1385	G-038-6		
		1/2	20-1390	G-038-8		
		3/4	20-1395	G-038-12		
	.062/.064	1/2	20-1400	G-063-8		
		3/4	20-1405	G-063-12		
		1”	20-1410	G-063-16		
	.093/.095	1/2	20-1415	G-094-8		
		3/4	20-1420	G-094-12		
		1”	20-1425	G-094-16		

APPLICATION: FOR RETAINING RING GROOVES & INTERNAL RELIEFS





MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	TOOL ID #	OFFSET	SHANK & O.A.L.
3/8	.039/.041	1/4	20-1430	G-039-4	.100	3/8 x 2-1/2
		3/8	20-1435	G-039-6		
		1/2	20-1440	G-039-8		
		3/4	20-1445	G-039-12		
		1”	20-1450	G-039-16		
		1-1/4	20-1455	G-039-20		
	.046/.048	1/4	20-1460	G-046-4		
		3/8	20-1465	G-046-6		
		1/2	20-1470	G-046-8		
		3/4	20-1475	G-046-12		
		1”	20-1480	G-046-16		
		1-1/4	20-1485	G-046-20		
	.055/.057	1/4	20-1490	G-055-4		
		3/8	20-1495	G-055-6		
		1/2	20-1500	G-055-8		
		3/4	20-1505	G-055-12		
		1”	20-1510	G-055-16		
		1-1/4	20-1515	G-055-20		
	.062/.064	1/4	20-1520	G-062-4		
		3/8	20-1525	G-062-6		
		1/2	20-1530	G-062-8		
		3/4	20-1535	G-062-12		
		1”	20-1540	G-062-16		
		1-1/4	20-1545	G-062-20		
	.069/.071	1/4	20-1550	G-069-4		
		3/8	20-1555	G-069-6		
		1/2	20-1560	G-069-8		
		3/4	20-1565	G-069-12		
		1”	20-1570	G-069-16		
		1-1/4	20-1575	G-069-20		

MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	TOOL ID #	OFFSET	SHANK & O.A.L.
3/8 CONT.	.087/.089	1/4	20-1580	G-087-4	.100	3/8 x 2-1/2
		3/8	20-1585	G-087-6		
		1/2	20-1590	G-087-8		
		3/4	20-1595	G-087-12		
		1”	20-1600	G-087-16		
		1-1/4	20-1605	G-087-20		
	.093/.095	1/2	20-1610	G-095-8		
		3/4	20-1615	G-095-12		
		1”	20-1620	G-095-16		
	.125/.127	1/2	20-1625	G-126-8		
		3/4	20-1630	G-126-12		
		1”	20-1635	G-126-16		
1/2	.093/.095	1/2	20-1640	G-093-8	.150	1/2 x 3”
		3/4	20-1645	G-093-12		
		1”	20-1650	G-093-16		
		1-1/4	20-1655	G-093-20		
		1-1/2	20-1660	G-093-24		
	.125/.127	1/2	20-1665	G-125-8		
		3/4	20-1670	G-125-12		
		1”	20-1675	G-125-16		
		1-1/4	20-1680	G-125-20		
		1-1/2	20-1685	G-125-24		
	.156/.158	1/2	20-1690	G-156-8		
		3/4	20-1695	G-156-12		
		1”	20-1700	G-156-16		
		1-1/4	20-1705	G-156-20		
		1-1/2	20-1710	G-156-24		
	.187/.189	1/2	20-1715	G-187-8		
		3/4	20-1720	G-187-12		
		1”	20-1725	G-187-16		
		1-1/4	20-1730	G-187-20		
		1-1/2	20-1735	G-187-24		
	.250/.252	1/2	20-1740	G-250-8		
		3/4	20-1745	G-250-12		
		1”	20-1750	G-250-16		
		1-1/4	20-1755	G-250-20		
		1-1/2	20-1760	G-250-24		

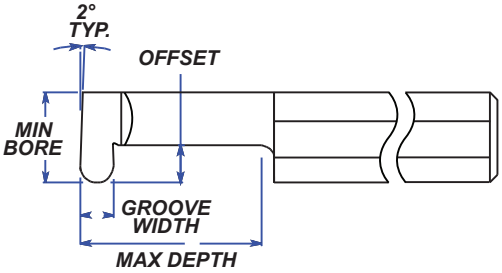
SERIES 24 FULL RADIUS GROOVING TOOLS

APPLICATION: FULL RADIUS GROOVES AND PROFILE WORK

MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	OFFSET	SHANK & OVERALL LENGTH
1/16	.031/.032	3/16	24-1170	24-1170-C	R-032-3	.020	1/8 x 2”
		1/4	24-1175	24-1175-C	R-032-4		
		3/8	24-1180	24-1180-C	R-032-6		
3/32	.046/.047	1/4	24-1185	24-1185-C	R-047-4	.030	
		3/8	24-1190	24-1190-C	R-047-6		
		1/2	24-1195	24-1195-C	R-047-8		
1/8	.062/.063	1/4	24-1200	24-1200-C	R-064-4	.040	
		3/8	24-1205	24-1205-C	R-064-6		
		1/2	24-1210	24-1210-C	R-064-8		
		5/8	24-1215	24-1215-C	R-064-10		
3/16	.017/.018	1/4	24-1220	24-1220-C	R-018-4	.050	3/16 x 2-1/2”
		3/8	24-1225	24-1225-C	R-018-6		
		1/2	24-1230	24-1230-C	R-018-8		
		5/8	24-1235	24-1235-C	R-018-10		
	.025/.026	1/4	24-1240	24-1240-C	R-026-4		
		3/8	24-1245	24-1245-C	R-026-6		
		1/2	24-1250	24-1250-C	R-026-8		
		5/8	24-1255	24-1255-C	R-026-10		
	.030/.031	1/4	24-1260	24-1260-C	R-031-4		
		3/8	24-1265	24-1265-C	R-031-6		
		1/2	24-1270	24-1270-C	R-031-8		
		5/8	24-1275	24-1275-C	R-031-10		
	.062/.063	1/4	24-1280	24-1280-C	R-061-4		
		3/8	24-1285	24-1285-C	R-061-6		
		1/2	24-1290	24-1290-C	R-061-8		
		5/8	24-1295	24-1295-C	R-061-10		
1/4	.017/.018	1/4	24-1300	24-1300-C	R-017-4	.050	1/4 x 2-1/2”
		3/8	24-1305	24-1305-C	R-017-6		
		1/2	24-1310	24-1310-C	R-017-8		
		5/8	24-1315	24-1315-C	R-017-10		
	.025/.026	1/4	24-1320	24-1320-C	R-025-4		
		3/8	24-1325	24-1325-C	R-025-6		
		1/2	24-1330	24-1330-C	R-025-8		
		5/8	24-1335	24-1335-C	R-025-10		
	.030/.031	1/4	24-1340	24-1340-C	R-030-4		
		3/8	24-1345	24-1345-C	R-030-6		
		1/2	24-1350	24-1350-C	R-030-8		
		5/8	24-1355	24-1355-C	R-030-10		
	.062/.064	3/8	24-1356	24-1356-C	R-060-6		
		1/2	24-1357	24-1357-C	R-060-8		
		5/8	24-1358	24-1358-C	R-060-10		
5/16	.033/.034	1/4	24-1365	24-1365-C	R-033-4	.100	5/16 x 2-1/2”
		3/8	24-1365	24-1365-C	R-033-6		
		1/2	24-1370	24-1370-C	R-033-8		
		5/8	24-1372	24-1372-C	R-033-10		
		3/4	24-1375	24-1375-C	R-033-12		
	.038/.039	1/4	24-1380	24-1380-C	R-038-4		
		3/8	24-1385	24-1385-C	R-038-6		
		1/2	24-1390	24-1390-C	R-038-8		
		3/4	24-1395	24-1395-C	R-038-12		
	.062/.064	1/2	24-1400	24-1400-C	R-063-8		
		3/4	24-1405	24-1405-C	R-063-12		
		1”	24-1410	24-1410-C	R-063-16		
	.093/.095	1/2	24-1415	24-1415-C	R-094-8		
		3/4	24-1420	24-1420-C	R-094-12		
		1”	24-1425	24-1425-C	R-094-16		
3/8	.039/.041	1/4	24-1430	24-1430-C	R-039-4	.100	3/8 x 2-1/2”
		3/8	24-1435	24-1435-C	R-039-6		
		1/2	24-1440	24-1440-C	R-039-8		
		5/8	24-1442	24-1442-C	R-039-10		
		3/4	24-1445	24-1445-C	R-039-12		
		1”	24-1450	24-1450-C	R-039-16		
		1-1/4	24-1455	24-1455-C	R-039-20		



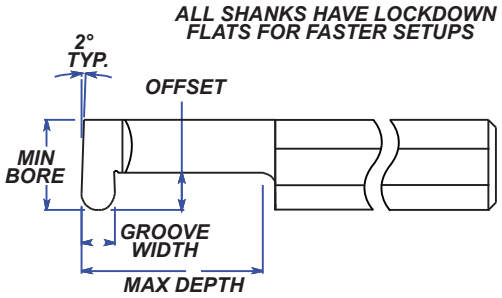
ALL SHANKS HAVE LOCKDOWN FLATS FOR FASTER SETUPS



Carbide Cutting Tools

APPLICATION: FULL RADIUS GROOVES AND PROFILE WORK





ALL SHANKS HAVE LOCKDOWN FLATS FOR FASTER SETUPS

MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	OFFSET	SHANK & OVERALL LENGTH
3/8	.046/.048	1/4	24-1460	24-1460-C	R-046-4	.100	3/8 x 2-1/2”
		3/8	24-1465	24-1465-C	R-046-6		
		1/2	24-1470	24-1470-C	R-046-8		
		3/4	24-1475	24-1475-C	R-046-12		
		1”	24-1480	24-1480-C	R-046-16		
		1-1/4	24-1485	24-1485-C	R-046-20		
	.055/.057	1/4	24-1490	24-1490-C	R-055-4		
		3/8	24-1495	24-1495-C	R-055-6		
		1/2	24-1500	24-1500-C	R-055-8		
		3/4	24-1505	24-1505-C	R-055-12		
		1”	24-1510	24-1510-C	R-055-16		
		1-1/4	24-1515	24-1515-C	R-055-20		
	.062/.064	1/4	24-1520	24-1520-C	R-062-4		
		3/8	24-1525	24-1525-C	R-062-6		
		1/2	24-1530	24-1530-C	R-062-8		
		3/4	24-1535	24-1535-C	R-062-12		
		1”	24-1540	24-1540-C	R-062-16		
		1-1/4	24-1545	24-1545-C	R-062-20		
	.069/.071	1/4	24-1550	24-1550-C	R-069-4		
		3/8	24-1555	24-1555-C	R-069-6		
		1/2	24-1560	24-1560-C	R-069-8		
		3/4	24-1565	24-1565-C	R-069-12		
		1”	24-1570	24-1570-C	R-069-16		
		1-1/4	24-1575	24-1575-C	R-069-20		
	.087/.089	1/4	24-1580	24-1580-C	R-087-4		
		3/8	24-1585	24-1585-C	R-087-6		
		1/2	24-1590	24-1590-C	R-087-8		
		3/4	24-1595	24-1595-C	R-087-12		
		1”	24-1600	24-1600-C	R-087-16		
		1-1/4	24-1605	24-1605-C	R-087-20		
	.093/.095	1/2	24-1610	24-1610-C	R-095-8		
		3/4	24-1615	24-1615-C	R-095-12		
		1”	24-1620	24-1620-C	R-095-16		
	.125/.127	1/2	24-1625	24-1625-C	R-126-8		
		3/4	24-1630	24-1630-C	R-126-12		
		1”	24-1635	24-1635-C	R-126-16		
1/2	.093/.095	1/2	24-1640	24-1640-C	R-093-8	.150	1/2 x 3”
		3/4	24-1645	24-1645-C	R-093-12		
		1”	24-1650	24-1650-C	R-093-16		
		1-1/4	24-1655	24-1655-C	R-093-20		
		1-1/2	24-1660	24-1660-C	R-093-24		
	.125/.127	1/2	24-1665	24-1665-C	R-125-8		
		3/4	24-1670	24-1670-C	R-125-12		
		1”	24-1675	24-1675-C	R-125-16		
		1-1/4	24-1680	24-1680-C	R-125-20		
		1-1/2	24-1685	24-1685-C	R-125-24		
	.156/.158	1/2	24-1690	24-1690-C	R-156-8		
		3/4	24-1695	24-1695-C	R-156-12		
		1”	24-1700	24-1700-C	R-156-16		
		1-1/4	24-1705	24-1705-C	R-156-20		
		1-1/2	24-1710	24-1710-C	R-156-24		
	.187/.189	1/2	24-1715	24-1715-C	R-187-8		
		3/4	24-1720	24-1720-C	R-187-12		
		1”	24-1725	24-1725-C	R-187-16		
		1-1/4	24-1730	24-1730-C	R-187-20		
		1-1/2	24-1735	24-1735-C	R-187-24		
	.250/.252	1/2	24-1740	24-1740-C	R-250-8		
		3/4	24-1745	24-1745-C	R-250-12		
		1”	24-1750	24-1750-C	R-250-16		
		1-1/4	24-1755	24-1755-C	R-250-20		
		1-1/2	24-1760	24-1760-C	R-250-24		

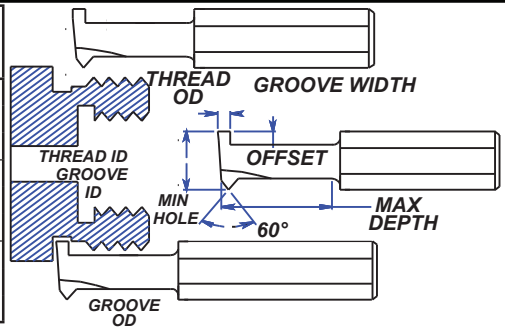
GROOVING TOOLS

SERIES 52 COMBINATION THREAD & GROOVE

APPLICATION : THREADING & GROOVING WITH THE SAME TOOL

FLAT ON BOTH SIDES OF SHANK

MIN BORE	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP#	TOOL ID #	GROOVE WIDTH	OFFSET	SHANK & O.A.L.
1/4	.500	52-1100	52-1100-C	TG-240-500	.094	.050	1/4 x 2-1/2"
	.750	52-1105	52-1105-C	TG-240-750			
	1.000	52-1110	52-1110-C	TG-240-1000			
5/16	.500	52-1115	52-1115-C	TG-310-500	.125	.060	5/16 x 2-1/2"
	.750	52-1120	52-1120-C	TG-310-750			
	1.000	52-1125	52-1125-C	TG-310-1000			
3/8	.500	52-1130	52-1130-C	TG-360-500	.156	.080	3/8 x 2-1/2"
	.750	52-1135	52-1135-C	TG-360-750			
	1.000	52-1140	52-1140-C	TG-360-1000			



WIDTHS CAN BE SIZED TO YOUR SPECIFICATIONS

SERIES 06 MULTI-REACH GROOVING TOOLS

APPLICATION : MULTI-REACH GROOVING NO LONGER LIMITED BY NECK LENGTH

MIN BORE	TOOL ID #	GROOVE WIDTH	ORDER EDP #	ALTIN COATED EDP#	OFFSET	SHANK D.I.A.	SHANK LENGTH
.310	LG-310-032	.032	06-1200	06-1200-C	.060	1/4	4"
	LG-310-063	.063	06-1205	06-1205-C			
	LG-310-094	.094	06-1210	06-1210-C			
	LG-310-125	.125	06-1215	06-1215-C			
.390	LG-390-032	.032	06-1220	06-1220-C	.075	5/16	4"
	LG-390-063	.063	06-1225	06-1225-C			
	LG-390-094	.094	06-1230	06-1230-C			
	LG-390-125	.125	06-1235	06-1235-C			
.475	LG-475-032	.032	06-1240	06-1240-C	.100	3/8	6"
	LG-475-063	.063	06-1245	06-1245-C			
	LG-475-094	.094	06-1250	06-1250-C			
	LG-475-125	.125	06-1255	06-1255-C			
.620	LG-620-032	.032	06-1260	06-1260-C	.120	1/2	6"
	LG-620-063	.063	06-1265	06-1265-C			
	LG-620-094	.094	06-1270	06-1270-C			
	LG-620-125	.125	06-1275	06-1275-C			

CARBIDE SHANKS PROVIDE MAXIMUM RIGIDITY.

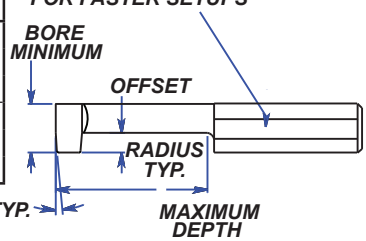


SERIES 27 O-RING GROOVE TOOLS

APPLICATION : O-RING GROOVING WITH TAPERED SIDES

MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	CORNER RADIUS	OFFSET	SHANK & OVERALL LENGTH
.250	.096/.098	.500	27-1300	27-1300-C	O-96-8	.010/.020	.100	1/4 x 2-1/2"
	.141/.143	.562	27-1305	27-1305-C	O-141-9	.035/.045		
	.144/.146	.625	27-1310	27-1310-C	O-144-10	.035/.045		
.375	.174/.176	.750	27-1315	27-1315-C	O-174-12	.010/.020	.115	3/8 x 2-1/2"
	.208/.210	.812	27-1320	27-1320-C	O-208-13	.035/.045		
	.241/.243	.940	27-1325	27-1325-C	O-241-15	.035/.045		

ALL SHANKS HAVE LOCKDOWN FLATS FOR FASTER SETUPS



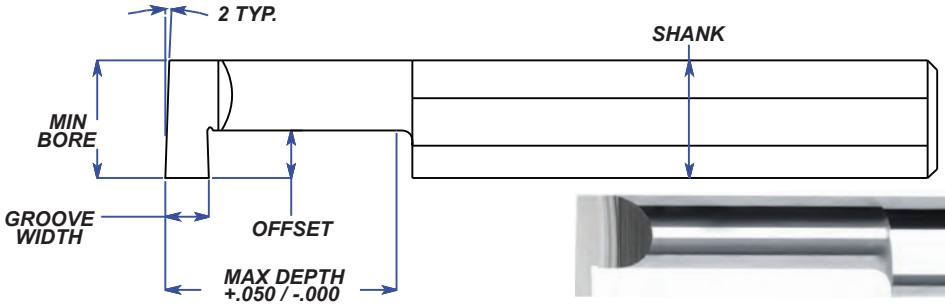


ITI CARBIDE AMERICAN MADE

Carbide Cutting Tools

SERIES 20 METRIC GROOVING TOOLS

APPLICATION : RETAINING RING GROOVES & INTERNAL RELIEFS



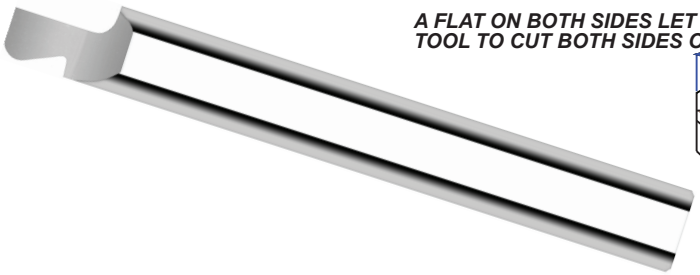
METRIC WIDTHS

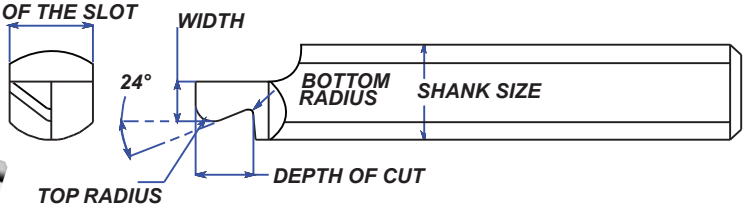
MIN BORE	GROOVE WIDTH +/-.0254MM	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	OFFSET	SHANK & OVERALL LENGTH
6.5	.5 MM (.0197)	13 MM	20-9920	20-9920-C	G-.5-13	.050	1/4 x 2-1/2"
	.9 MM (.0354)	13 MM	20-9930	20-9930-C	G-.9-13		
	1.1 MM (.0433)	13 MM	20-9940	20-9940-C	G-1.1-13		
	1.3 MM (.0512)	13 MM	20-9950	20-9950-C	G-1.3-13		
9.5	1.85 MM (.0728)	13 MM	20-9960	20-9960-C	G-1.85-13	.100	3/8 x 2-1/2"
	2.15 MM (.0847)	13 MM	20-9970	20-9970-C	G-2.15-13		
	2.65 MM (.1044)	13 MM	20-9980	20-9980-C	G-2.65-13		
	3.0 MM (.1182)	13 MM	20-9982	20-9982-C	G-3.0-13		
12.7	3.0 MM (.1182)	19 MM	20-9985	20-9985-C	G-3.0-19	.150	1/2 x 3"
	4.0 MM (.1576)	19 MM	20-9990	20-9990-C	G-4.0-19		
	6.0 MM (.2364)	19 MM	20-9995	20-9995-C	G-6.0-19		

SERIES 53 O-RING DOVETAIL GROOVERS

APPLICATION : CUT-TURN 24° O-RING DOVETAILS. THEY CUT WITH BOTH TOP & BOTTOM RADIUS.

MILLING STYLE O'RING TOOLS ARE ON PAGE 95





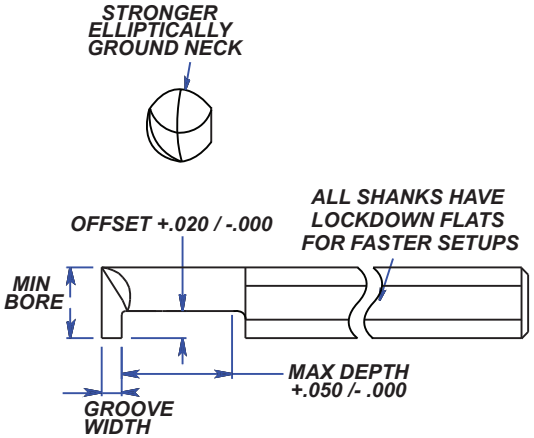
O-RING SIZE	WIDTH	ORDER EDP #	ALTIN COATED EDP #	DEPTH OF CUT	BOTTOM RADIUS	TOP RADIUS	SHANK & OVERALL LENGTH
.070	.040	53-4000	53-4000-C	.051	.005	.015	1/8 x 2"
.093	.060	53-4005	53-4005-C	.075	.010	.015	1/8 x 2"
.103	.065	53-4010	53-4010-C	.082	.010	.015	1/8 x 2"
.125	.082	53-4015	53-4015-C	.102	.010	.031	3/16 x 2-1/2"
.139	.085	53-4020	53-4020-C	.112	.010	.031	3/16 x 2-1/2"
.187	.130	53-4025	53-4025-C	.154	.015	.031	1/4 x 2-1/2"
.210	.140	53-4030	53-4030-C	.172	.015	.031	1/4 x 2-1/2"
.250	.173	53-4035	53-4035-C	.212	.015	.062	1/4 x 2-1/2"
.275	.180	53-4040	53-4040-C	.232	.015	.062	5/16 x 2-1/2"
.375	.240	53-4045	53-4045-C	.317	.020	.094	5/16 x 2-1/2"

SERIES 22 ALTIN COATED MAX-GROOVE

APPLICATION : FOR INTERNAL GROOVING AND RELIEVING

MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	TOOL ID #	OFFSET	SHANK & OVERALL LENGTH
1/4	.017/.018	1/4	22-1100	MG-25-017-250	.050	1/4 x 2-1/2"
		3/8	22-1105	MG-25-017-375		
		1/2	22-1110	MG-25-017-500		
		5/8	22-1115	MG-25-017-625		
	.025/.026	1/4	22-1120	MG-25-025-250		
		3/8	22-1125	MG-25-025-375		
		1/2	22-1130	MG-25-025-500		
		5/8	22-1135	MG-25-025-625		
	.030/.031	1/4	22-1140	MG-25-030-250		
		3/8	22-1145	MG-25-030-375		
		1/2	22-1150	MG-25-030-500		
		5/8	22-1155	MG-25-030-625		
	.062/.064	1/4	22-1160	MG-25-063-250		
		3/8	22-1165	MG-25-063-375		
		1/2	22-1170	MG-25-063-500		
		5/8	22-1175	MG-25-063-625		
	.093/.095	1/4	22-1180	MG-25-094-250		
		3/8	22-1185	MG-25-094-375		
		1/2	22-1190	MG-25-094-500		
		5/8	22-1195	MG-25-094-625		
	.125/.127	1/4	22-1200	MG-25-125-250		
		3/8	22-1205	MG-25-125-375		
		1/2	22-1210	MG-25-125-500		
		5/8	22-1215	MG-25-125-625		
5/16	.033/.034	1/4	22-1220	MG-31-033-250	.100	5/16 x 2-1/2"
		3/8	22-1225	MG-31-033-375		
		1/2	22-1230	MG-31-033-500		
		5/8	22-1235	MG-31-033-625		
	.038/.039	1/4	22-1240	MG-31-038-250		
		3/8	22-1245	MG-31-038-375		
		1/2	22-1250	MG-31-038-500		
		5/8	22-1255	MG-31-038-625		
	.062/.064	1/2	22-1260	MG-31-063-500		
		3/4	22-1265	MG-31-063-750		
		1"	22-1270	MG-31-063-1000		
	.093/.095	1/2	22-1275	MG-31-094-500		
		3/4	22-1280	MG-31-094-750		
		1"	22-1285	MG-31-094-1000		
	.125/.127	1/2	22-1290	MG-31-125-500		
		3/4	22-1295	MG-31-125-750		
		1"	22-1300	MG-31-125-1000		
3/8	.039/.041	1/4	22-1305	MG-37-039-250	.100	3/8 x 2-1/2"
		3/8	22-1310	MG-37-039-375		
		1/2	22-1315	MG-37-039-500		
		3/4	22-1320	MG-37-039-750		
		1"	22-1325	MG-37-039-1000		
		1-1/4	22-1330	MG-37-039-1250		
	.046/.048	1/4	22-1335	MG-37-046-250		
		3/8	22-1340	MG-37-046-375		
		1/2	22-1345	MG-37-046-500		
		3/4	22-1350	MG-37-046-750		
		1"	22-1355	MG-37-046-1000		
		1-1/4	22-1360	MG-37-046-1250		
	.055/.057	1/4	22-1365	MG-37-055-250		
		3/8	22-1370	MG-37-055-375		
		1/2	22-1375	MG-37-055-500		
		3/4	22-1380	MG-37-055-750		
		1"	22-1385	MG-37-055-1000		
		1-1/4	22-1390	MG-37-055-1250		

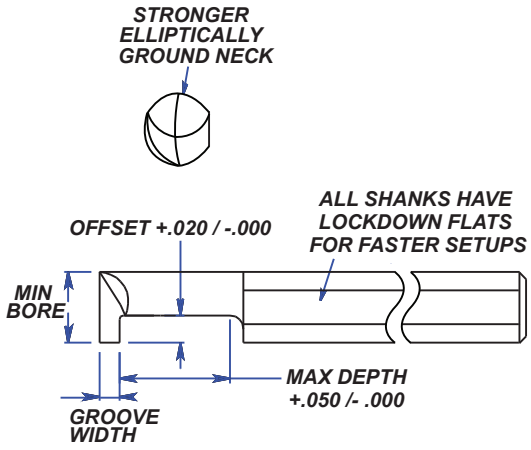




Max-Groove is the Ultimate in Grooving tools. Featuring an elliptical neck for greater strength. A special helical flute for maximum shearing action with a better finish, and a ALTIN coating for a longer life. Max-Groove outperforms and outlasts our competitors grooving tools two to one.

APPLICATION : FOR INTERNAL GROOVING AND RELIEVING





Max-Groove is the Ultimate in Grooving tools. Featuring an elliptical neck for greater strength. A special helical flute for maximum shearing action with a better finish, and a ALTIN coating for a longer life. Max-Groove outperforms and outlasts our competitors grooving tools two to one.

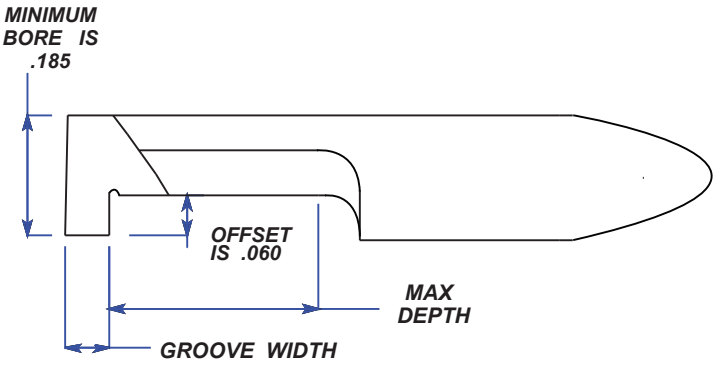
MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	TOOL ID #	OFFSET	SHANK & OVERALL LENGTH
3/8	.062/.064	1/4	22-1395	MG-37-063-250	.100	3/8 x 2-1/2”
		3/8	22-1400	MG-37-063-375		
		1/2	22-1405	MG-37-063-500		
		3/4	22-1410	MG-37-063-750		
		1”	22-1415	MG-37-063-1000		
		1-1/4	22-1420	MG-37-063-1250		
	.069/.071	1/4	22-1425	MG-37-069-250		
		3/8	22-1430	MG-37-069-375		
		1/2	22-1435	MG-37-069-500		
		3/4	22-1440	MG-37-069-750		
		1”	22-1445	MG-37-069-1000		
		1-1/4	22-1450	MG-37-069-1250		
	.087/.089	1/4	22-1455	MG-37-087-250		
		3/8	22-1460	MG-37-087-375		
		1/2	22-1465	MG-37-087-500		
		3/4	22-1470	MG-37-087-750		
		1”	22-1475	MG-37-087-1000		
		1-1/4	22-1480	MG-37-087-1250		
	.093/.095	1/2	22-1485	MG-37-500		
		3/4	22-1490	MG-37-750		
		1”	22-1495	MG-37-1000		
	.125/.127	1/2	22-1500	MG-37-500		
		3/4	22-1505	MG-37-750		
		1”	22-1510	MG-37-100		
1/2	.062/.064	1/2	22-1515	MG-50-063-500	.150	1/2 x 3”
		3/4	22-1520	MG-50-063-750		
		1”	22-1525	MG-50-063-1000		
		1-1/4	22-1530	MG-50-063-1250		
		1-1/2	22-1535	MG-50-063-1500		
	.093/.095	1/2	22-1540	MG-50-094-500		
		3/4	22-1545	MG-50-094-750		
		1”	22-1550	MG-50-094-1000		
		1-1/4	22-1555	MG-50-094-1250		
		1-1/2	22-1560	MG-50-094-1500		
	.125/.127	1/2	22-1565	MG-50-125-500		
		3/4	22-1570	MG-50-125-750		
		1”	22-1575	MG-50-125-1000		
		1-1/4	22-1580	MG-50-125-1250		
		1-1/2	22-1585	MG-50-125-1500		
	.156/.158	1/2	22-1590	MG-50-156-500		
		3/4	22-1595	MG-50-156-750		
		1”	22-1600	MG-50-156-1000		
		1-1/4	22-1605	MG-50-156-1250		
		1-1/2	22-1610	MG-50-156-1500		
	.187/.189	1/2	22-1615	MG-50-187-500		
		3/4	22-1620	MG-50-187-750		
		1”	22-1625	MG-50-187-1000		
		1-1/4	22-1630	MG-50-187-1250		
		1-1/2	22-1635	MG-50-187-1500		
	.250/.252	1/2	22-1640	MG-50-250-500		
		3/4	22-1645	MG-50-250-750		
		1”	22-1650	MG-50-250-1000		
		1-1/4	22-1655	MG-50-250-1250		
		1-1/2	22-1660	MG-50-250-1500		

SERIES 42 QUICK CHANGE GROOVING TOOL

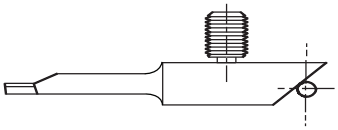
APPLICATION : LOCKED INTO OUR SPECIAL HOLDER MAINTAINING AN EXACT RADIAL AND AXIAL POSITION FOR QUICK TOOL CHANGE



Quick Change Tools Are Also Available For Boring, Threading, Profiling And Face Grooving. See Pages 12,41,51 And,39.



GROOVE WIDTH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP#
.017 / .018	.200	42-7000	42-7000-C
	.300	42-7005	42-7005-C
	.400	42-7010	42-7010-C
	.500	42-7015	42-7015-C
	.600	42-7020	42-7020-C
	.700	42-7025	42-7025-C
.028 / .029	.200	42-7030	42-7030-C
	.300	42-7035	42-7035-C
	.400	42-7040	42-7040-C
	.500	42-7045	42-7045-C
	.600	42-7050	42-7050-C
	.700	42-7055	42-7055-C
.031 / .032	.200	42-7060	42-7060-C
	.300	42-7065	42-7065-C
	.400	42-7070	42-7070-C
	.500	42-7075	42-7075-C
	.600	42-7080	42-7080-C
	.700	42-7085	42-7085-C
.032 / .033	.200	42-7090	42-7090-C
	.300	42-7095	42-7095-C
	.400	42-7100	42-7100-C
	.500	42-7105	42-7105-C
	.600	42-7110	42-7110-C
	.700	42-7115	42-7115-C
.038 / .039	.200	42-7120	42-7120-C
	.300	42-7125	42-7125-C
	.400	42-7130	42-7130-C
	.500	42-7135	42-7135-C
	.600	42-7140	42-7140-C
	.700	42-7145	42-7145-C



ALL TOOLS HAVE A GROUND ANGLE ON THE SHANK WHICH LOCKS IN PLACE AGAINST A LOCATING PIN, MAINTAINING AN EXACT RADIAL AND AXIAL POSITION



HOLDERS ARE AVAILABLE WITH 3/8, 1/2, 5/8,3/4 & 22mm SHANK SIZES.	
STANDARD STYLE	
3/8 SHANK	EDP# 42-9000
1/2 SHANK	EDP# 42-9005
5/8 SHANK	EDP# 42-9010
3/4 SHANK	EDP# 42-9015
22 MM SHANK	EDP# 42-9020

STANDARD HOLDERS



SERIES 42 QUICK CHANGE GROOVING TOOL

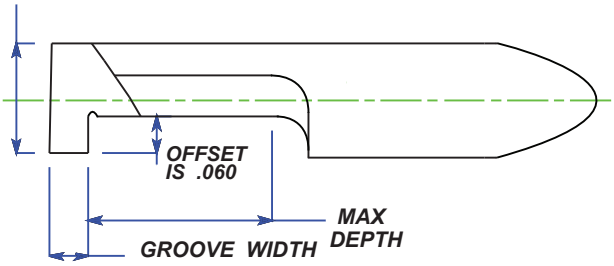
APPLICATION : LOCKED INTO OUR SPECIAL HOLDER MAINTAINING AN EXACT RADIAL AND AXIAL POSITION FOR QUICK TOOL CHANGE

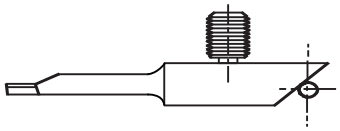


Quick Change Tools Are Also Available For Boring, Threading, Profiling And Face Grooving. See Pages 12,42,50 And,39.

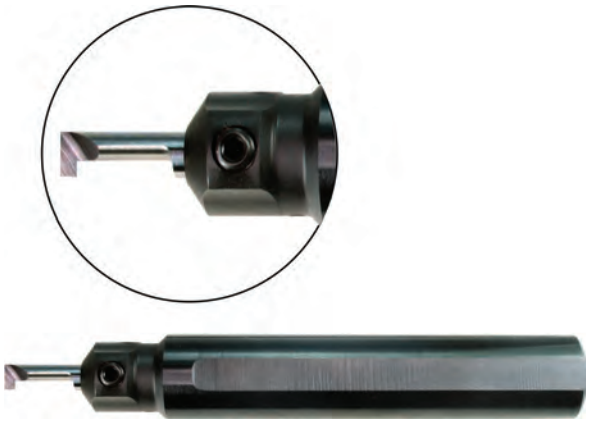
GROOVE WIDTH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP#
.039 / .040	.200	42-7150	42-7150-C
	.300	42-7155	42-7155-C
	.400	42-7160	42-7160-C
	.500	42-7165	42-7165-C
	.600	42-7170	42-7170-C
	.700	42-7175	42-7175-C
.045 / .046	.200	42-7180	42-7180-C
	.300	42-7185	42-7185-C
	.400	42-7190	42-7190-C
	.500	42-7195	42-7195-C
	.600	42-7200	42-7200-C
	.700	42-7205	42-7205-C
.047 / .048	.200	42-7210	42-7210-C
	.300	42-7215	42-7215-C
	.400	42-7220	42-7220-C
	.500	42-7225	42-7225-C
	.600	42-7230	42-7230-C
	.700	42-7235	42-7235-C
.055 / .056	.200	42-7240	42-7240-C
	.300	42-7245	42-7245-C
	.400	42-7250	42-7250-C
	.500	42-7255	42-7255-C
	.600	42-7260	42-7260-C
	.700	42-7265	42-7265-C
.061 / .062	.200	42-7270	42-7270-C
	.300	42-7275	42-7275-C
	.400	42-7280	42-7280-C
	.500	42-7285	42-7285-C
	.600	42-7290	42-7290-C
	.700	42-7295	42-7295-C

MINIMUM BORE IS .185





ALL TOOLS HAVE A GROUND ANGLE ON THE SHANK WHICH LOCKS IN PLACE AGAINST A LOCATING PIN, MAINTAINING AN EXACT RADIAL AND AXIAL POSITION



COOLANT THROUGH HOLDERS

HOLDERS ARE AVAILABLE WITH 3/8, 1/2, 5/8, 3/4 & 22mm SHANK SIZES.	
COOLANT STANDARD STYLE	
3/8 SHANK	EDP# 42-9500
1/2 SHANK	EDP# 42-9505
5/8 SHANK	EDP# 42-9510
3/4 SHANK	EDP# 42-9515
22 MM SHANK	EDP# 42-9520

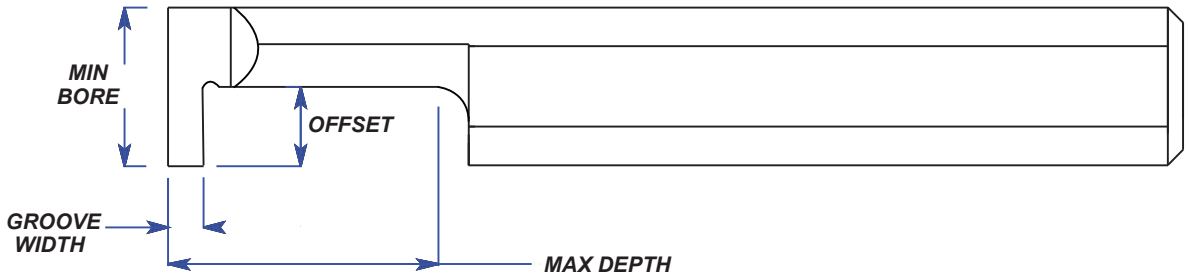


SERIES 121 DEEP SLOTTING GROOVE TOOLS

APPLICATION : FOR DEEPER RETAINING RING GROOVES & INTERNAL RELIEFS



New!



MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	OFFSET	SHANK & O.A.L.
1/4	.030/.031	1/4	121-1000	121-1000-C	.080	1/4 x 2-1/2"
		3/8	121-1005	121-1005-C		
		1/2	121-1010	121-1010-C		
	.062/.064	1/4	121-1015	121-1015-C		
		3/8	121-1020	121-1020-C		
		1/2	121-1025	121-1025-C		
5/16	.030/.031	1/4	121-1030	121-1030-C	.150	5/16 x 2-1/2"
		3/8	121-1035	121-1035-C		
		1/2	121-1040	121-1040-C		
		3/4	121-1045	121-1045-C		
		1"	121-1050	121-1050-C		
	.062/.064	1/4	121-1055	121-1055-C		
		3/8	121-1060	121-1060-C		
		1/2	121-1065	121-1065-C		
		3/4	121-1070	121-1070-C		
		1"	121-1075	121-1075-C		
	.093/.095	3/8	121-1080	121-1080-C		
		1/2	121-1085	121-1085-C		
		3/4	121-1090	121-1090-C		
		1"	121-1095	121-1095-C		

MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	OFFSET	SHANK & O.A.L.
3/8	.030/.031	3/8	121-1100	121-1100-C	.150	3/8 x 2-1/2"
		1/2	121-1105	121-1105-C		
		3/4	121-1110	121-1110-C		
		1"	121-1115	121-1115-C		
	.046/.048	3/8	121-1120	121-1120-C		
		1/2	121-1125	121-1125-C		
		3/4	121-1130	121-1130-C		
		1"	121-1135	121-1135-C		
	.062/.064	3/8	121-1140	121-1140-C		
		1/2	121-1145	121-1145-C		
		3/4	121-1150	121-1150-C		
		1"	121-1155	121-1155-C		
	.093/.095	3/8	121-1160	121-1160-C		
		1/2	121-1165	121-1165-C		
		3/4	121-1170	121-1170-C		
		1"	121-1175	121-1175-C		
	.125/.127	3/8	121-1180	121-1180-C		
		1/2	121-1185	121-1185-C		
		3/4	121-1190	121-1190-C		
		1"	121-1195	121-1195-C		
1/2	.062/.064	1/2	121-1200	121-1200-C	.200	1/2 x 3"
		3/4	121-1205	121-1205-C		
		1"	121-1210	121-1210-C		
		1-1/4	121-1215	121-1215-C		
	.093/.095	1/2	121-1220	121-1220-C		
		3/4	121-1225	121-1225-C		
		1"	121-1230	121-1230-C		
		1-1/4	121-1235	121-1235-C		
	.125/.127	1/2	121-1240	121-1240-C		
		3/4	121-1245	121-1245-C		
		1"	121-1250	121-1250-C		
		1-1/4	121-1255	121-1255-C		
	.187/189	1/2	121-1260	121-1260-C		
		3/4	121-1265	121-1265-C		
		1"	121-1270	121-1270-C		
		1-1/4	121-1275	121-1275-C		

OVER 6000 TOOLS NOW AVAILABLE

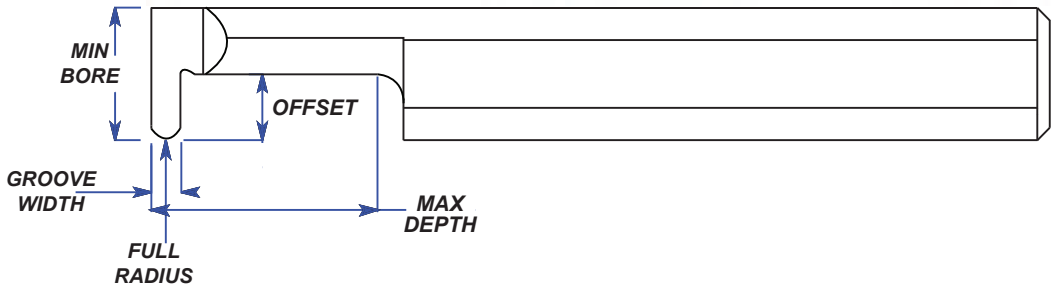
Carbide Cutting Tools

SERIES 123 DEEP SLOTTING FULL RADIUS

APPLICATION : FOR DEEPER RETAINING RING GROOVES & INTERNAL RELIEFS

New!





MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	OFFSET	SHANK & O.A.L.
1/4	.030/.031	1/4	123-1000	123-1000-C	.080	1/4 x 2-1/2"
		3/8	123-1005	123-1005-C		
		1/2	123-1010	123-1010-C		
	.062/.064	1/4	123-1015	123-1015-C		
		3/8	123-1020	123-1020-C		
		1/2	123-1025	123-1025-C		
5/16	.030/.031	1/4	123-1030	123-1030-C	.150	5/16 x 2-1/2"
		3/8	123-1035	123-1035-C		
		1/2	123-1040	123-1040-C		
		3/4	123-1045	123-1045-C		
		1"	123-1050	123-1050-C		
	.062/.064	1/4	123-1055	123-1055-C		
		3/8	123-1060	123-1060-C		
		1/2	123-1065	123-1065-C		
		3/4	123-1070	123-1070-C		
		1"	123-1075	123-1075-C		
	.093/.095	3/8	123-1080	123-1080-C		
		1/2	123-1085	123-1085-C		
		3/4	123-1090	123-1090-C		
		1"	123-1095	123-1095-C		

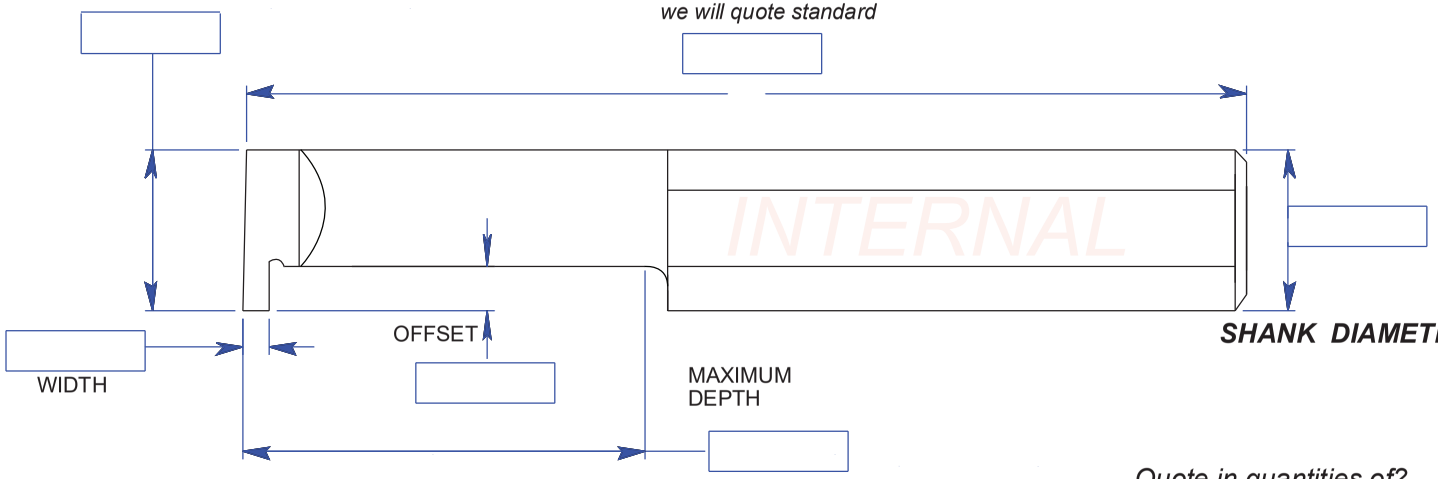
MIN BORE	GROOVE WIDTH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	OFFSET	SHANK & O.A.L.
3/8	.030/.031	3/8	123-1100	123-1100-C	.150	3/8 x 2-1/2"
		1/2	123-1105	123-1105-C		
		3/4	123-1110	123-1110-C		
		1"	123-1115	123-1115-C		
	.046/.048	3/8	123-1120	123-1120-C		
		1/2	123-1125	123-1125-C		
		3/4	123-1130	123-1130-C		
		1"	123-1135	123-1135-C		
	.062/.064	3/8	123-1140	123-1140-C		
		1/2	123-1145	123-1145-C		
		3/4	123-1150	123-1150-C		
		1"	123-1155	123-1155-C		
	.093/.095	3/8	123-1160	123-1160-C		
		1/2	123-1165	123-1165-C		
		3/4	123-1170	123-1170-C		
		1"	123-1175	123-1175-C		
	.125/.127	3/8	123-1180	123-1180-C		
		1/2	123-1185	123-1185-C		
		3/4	123-1190	123-1190-C		
		1"	123-1195	123-1195-C		
1/2	.062/.064	1/2	123-1200	123-1200-C	.200	1/2 x 3"
		3/4	123-1205	123-1205-C		
		1"	123-1210	123-1210-C		
		1-1/4	123-1215	123-1215-C		
	.093/.095	1/2	123-1220	123-1220-C		
		3/4	123-1225	123-1225-C		
		1"	123-1230	123-1230-C		
		1-1/4	123-1235	123-1235-C		
	.125/.127	1/2	123-1240	123-1240-C		
		3/4	123-1245	123-1245-C		
		1"	123-1250	123-1250-C		
		1-1/4	123-1255	123-1255-C		
	.187/189	1/2	123-1260	123-1260-C		
		3/4	123-1265	123-1265-C		
		1"	123-1270	123-1270-C		
		1-1/4	123-1275	123-1275-C		

Simply make a copy
fill in the information below and email to us.
we will quote as soon as possible. *INFO@generalcuttingtools.com*

REVISIONS:		

MAJOR DIAMETER
Try to keep same size
as shank or smaller

OVERALL LENGTH
If not sure leave blank
we will quote standard



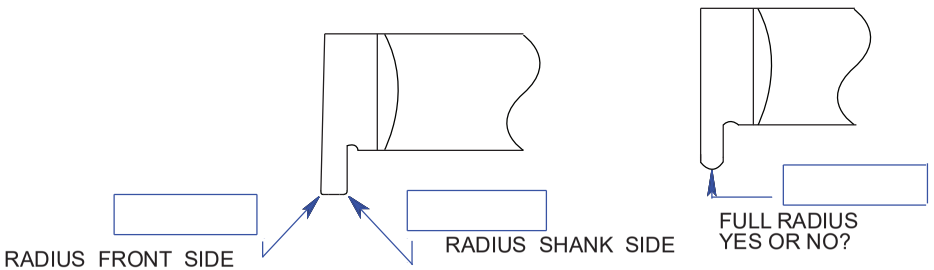
SHANK DIAMETER

TRY TO KEEP
SAME SIZE AS OR
LARGER THAN
THE HEAD

Quote in quantities of?
THE MORE YOU BUY
THE CHEAPER THEY GET

QUANITY: _____

_____



YOUR COMPANY NAME: _____

CONTACT : _____

PHONE: _____

FAX: _____

YOUR DISTRIBUTOR: _____

Carbide Cutting Tools

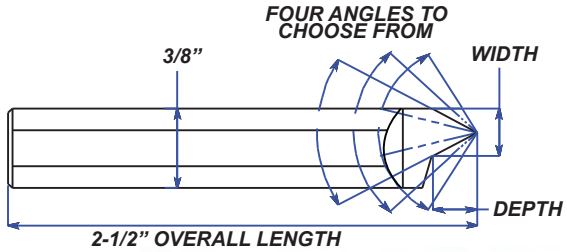
DRAWN BY:	DATE:	REV:
TOOL NUMBER:		

TOLERANCE UNLESS OTHERWISE SPECIFIED

.X = +/- 1/32
.XX = +/- .010
.XXX = +/- .002
.XXXX = +/- .0005
ANGLES +/- 0.15°

SERIES 39 EXTERNAL THREAD/CHAMFER

APPLICATION : FOR THREADING ALL TYPES OF MATERIALS



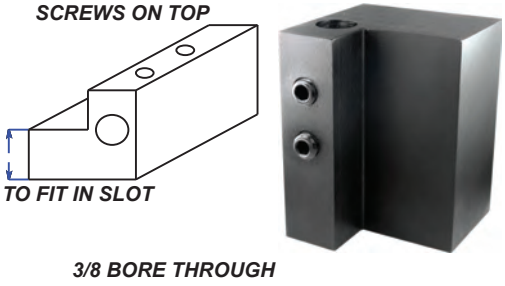
INC. ANGLE	WIDTH	DEPTH	ORDER EDP #	TOOL ID #
30°	.102	.190	39-1000	EX-30-DBL
60°	.250	.216	39-1005	EX-60-DBL
90°	.187	.187	39-1010	EX-90-DBL
120°	.187	.108	39-1015	EX-120-DBL



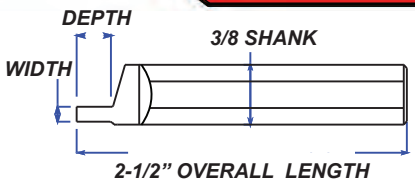
SERIES 39 HOLDERS / EXTERNAL GROOVE

APPLICATION : FOR EXTERNAL GROOVING

ORDER EDP #	TO FIT IN THIS SIZE SLOT
39-7400	1/2 SQUARE
39-7410	5/8 SQUARE
39-7420	3/4 SQUARE
39-7430	1" SQUARE







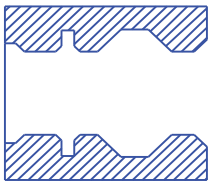
WIDTH	DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #
.030/.031	.072	39-6000	39-6000-C	EX-030-RET
.035/.036	.075	39-6005	39-6005-C	EX-035-RET
.041/.042	.090	39-6010	39-6010-C	EX-041-RET
.047/.049	.095	39-6015	39-6015-C	EX-047-RET
.056/.057	.125	39-6020	39-6020-C	EX-056-RET
.068/.071	.130	39-6025	39-6025-C	EX-068-RET

SERIES 43 LATHE I.D. CHAMFER TOOLS

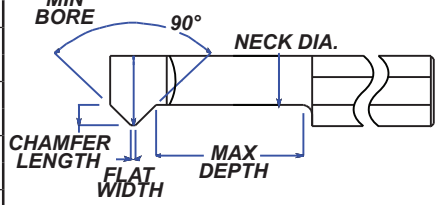
APPLICATION : INSIDE CHAMFERS



MIN BORE	NECK DIA	FLAT WIDTH	CHAMFER LENGTH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	SHANK & OVERALL LENGTH
.115	.075	.030	.040	.500	43-2000	43-2000-C	LA-115-500	1/8 x 2"
				.750	43-2005	43-2005-C	LA-115-750	
.175	.125	.030	.050	.750	43-2010	43-2010-C	LA-175-750	3/16 x 2-1/2"
				1.000	43-2015	43-2015-C	LA-175-1000	
.240	.170	.030	.070	.750	43-2020	43-2020-C	LA-240-750	1/4 x 2-1/2"
				1.250	43-2025	43-2025-C	LA-240-1250	
.300	.210	.030	.090	.750	43-2030	43-2030-C	LA-300-750	5/16 x 2-1/2"
				1.250	43-2035	43-2035-C	LA-300-1250	
.360	.250	.030	.110	.750	43-2040	43-2040-C	LA-360-750	3/8 x 2-1/2"
				1.250	43-2045	43-2045-C	LA-360-1250	
.490	.350	.030	.140	1.000	43-2050	43-2050-C	LA-490-1000	1/2 x 3"
				1.500	43-2055	43-2055-C	LA-490-1500	



ALL SHANKS HAVE LOCKDOWN FLATS FOR FASTER SETUPS



MAKING QUALITY TOOLS SINCE 1957

INSERT STYLE GROOVING TOOLS

SERIES 26 LAY-DOWN STYLE INSERT GROOVE

APPLICATION : FOR GROOVING ALL MATERIALS, USING LAYDOWN GROOVING INSERTS



.640 MINIMUM BORE

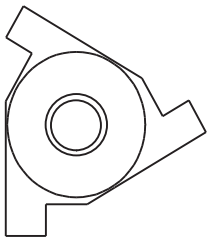
HEAD ID #	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW #	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE W/ COOLANT HOLE ORDER EDP #
G-640	1/2	3/8	99-1155	S-16-S	9/64	3”	26-1100	26-1105	26-1110
						6”	26-1115	26-1120	26-1125
						9”	26-1130	26-1135	26-1140
						12”	26-1145	26-1150	26-1155

.750 MINIMUM BORE

HEAD ID #	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW #	INSERT THICKNESS	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE W/ COOLANT HOLE ORDER EDP #
G-750	5/8	3/8	99-1155	S-16	9/64	3”	26-1160	26-1165	26-1170
						6”	26-1175	26-1180	26-1185
						9”	26-1190	26-1195	26-1200
						12”	26-1205	26-1210	26-1215

INSERTS FOR ABOVE BARS 3/8” INSERT I.C.

CARBIDE GRADE	GROOVE WIDTH	CUTING DEPTH	ORDER EDP #
C-2 UNCOATED	.031	.046	26-1700
TIN COATED	.031	.046	26-1735
C-2 UNCOATED	.047	.062	26-1705
TIN COATED	.047	.062	26-1740
C-2 UNCOATED	.062	.062	26-1710
TIN COATED	.062	.062	26-1745
C-2 UNCOATED	.078	.078	26-1715
TIN COATED	.078	.078	26-1750
C-2 UNCOATED	.094	.078	26-1720
TIN COATED	.094	.078	26-1755
C-2 UNCOATED	.097	.070	26-1725
TIN COATED	.097	.070	26-1760
C-2 UNCOATED	.125	.050	26-1730
TIN COATED	.125	.050	26-1765

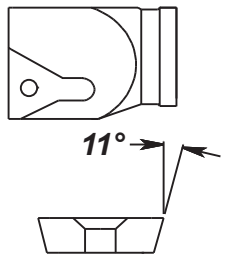




NOTICE: *INSERT GROOVING BARS ARE MADE TO ORDER; PLEASE CALL FOR DELIVERY TIME, OTHERWISE THE DELIVERY TIME WILL BE QUOTED IN AN ORDER CONFIRMATION*

APPLICATION : REPLACEMENT HEADS FOR OUR BORING AND GROOVING INSERT TOOLS

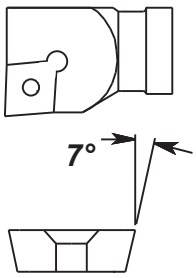
SERIES 40 11° TRIANGLE





MIN BORE	SHANK DIA	HEAD ID #	ORDER EDP #	INSERT	I.C.	INSERT THICKNESS
5/16	1/4	T-11-31	40-1110	TBGP-520	5/32	1/16
3/8	5/16	T-11-37	40-1115	TPGP-630	3/16	3/32
7/16	3/8	T-11-43	40-1120	TPGP-630	3/16	3/32
1/2	3/8	T-11-50	40-1125	TPGP-22YL	1/4	1/8
9/16	1/2	T-11-56	40-1130	TPGP-22YL	1/4	1/8
5/8	1/2	T-11-62	40-1135	TPGP-22YL	1/4	1/8
11/16	5/8	T-11-68	40-1140	TPGP-22YL	1/4	1/8
3/4	5/8	T-11-75	40-1145	TPGP-22YL	1/4	1/8
7/8	3/4	T-11-87	40-1150	TPGP-33YL	3/8	3/16
1”	3/4	T-11-10	40-1155	TPGP-33YL	3/8	3/16
1-1/8	1”	T-11-11	40-1160	TPGP-33YL	3/8	3/16

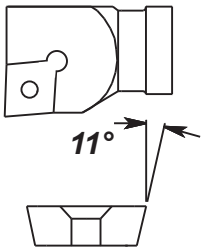
SERIES 40 7° DIAMOND





MIN BORE	SHANK DIA	HEAD ID #	ORDER EDP #	INSERT	I.C.	INSERT THICKNESS
3/8	5/16	D07-37	40-1165	CCMT-21.51	1/4	3/32
7/16	3/8	D07-43	40-1170	CCMT-21.51	1/4	3/32
1/2	3/8	D07-50	40-1175	CCMT-21.51	1/4	3/32
9/16	1/2	D07-56	40-1180	CCMT-21.51	1/4	3/32
5/8	1/2	D07-62	40-1185	CCMT-21.51	1/4	3/32
5/8	1/2	D07-62B	40-1187	CCMT-32.51	3/8	5/32
11/16	5/8	D07-68	40-1190	CCMT-21.51	1/4	3/32
11/16	5/8	D07-68B	40-1192	CCMT-32.51	3/8	5/32
3/4	5/8	D07-75	40-1195	CCMT-21.51	1/4	3/32
3/4	5/8	D07-75B	40-1197	CCMT-32.51	3/8	5/32
7/8	3/4	D07-87	40-1200	CCMT-32.51	3/8	5/32
1”	3/4	D07-10	40-1205	CCMT-32.51	3/8	5/32
1-1/8	1”	D07-11	40-1210	CCMT-32.51	3/8	5/32

SERIES 40 11° DIAMOND





MIN BORE	SHANK DIA	HEAD ID #	ORDER EDP #	INSERT	I.C.	INSERT THICKNESS
3/8	5/16	D11-37	40-1215	CPGT-21.51	1/4	3/32
7/16	3/8	D11-43	40-1220	CPGT-21.51	1/4	3/32
1/2	3/8	D11-50	40-1225	CPGT-21.51	1/4	3/32
9/16	1/2	D11-56	40-1230	CPGT-21.51	1/4	3/32
5/8	1/2	D11-62	40-1235	CPGT-21.51	1/4	3/32
11/16	5/8	D11-68	40-1240	CPGT-21.51	1/4	3/32
3/4	5/8	D11-75	40-1245	CPGT-21.51	1/4	3/32
7/8	3/4	D11-87	40-1250	CPGT-32.51	3/8	5/32
1”	3/4	D11-10	40-1255	CPGT-32.51	3/8	5/32
1-1/8	1”	D11-11	40-1260	CPGT-32.51	3/8	5/32

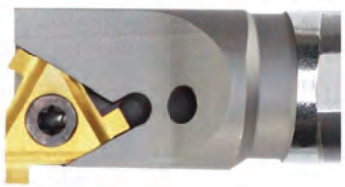
SERIES 99 SCREWS

ORDER EDP #	SCREW #
99-1100	BFH-0203S
99-1105	BFH-0203B
99-1110	BFH-0206R
99-1115	BFX-0410R
99-1120	S-90
99-1125	S-95
99-1130	S-98
99-1132	S-98-S
99-1135	S-6
99-1145	S-8
99-1150	S-11
99-1155	S-16-S
99-1160	S-16
99-1165	BHF-0308R
99-1170	BFTX-02506



SERIES 40 LAY DOWN STYLE THREAD/GROOVE





THREAD STYLE				
MIN BORE	SHANK DIA	HEAD ID #	ORDER EDP #	I.C.
.236	3/16	T001	40-1265	5/32
.307	1/4	T002	40-1270	3/16
.354	5/16	T003	40-1275	1/4
.390	5/16	T003.5	40-1277	1/4
.470	3/8	T004	40-1280	1/4
.625	1/2	T005	40-1285	3/8
.640	1/2	T006	40-1290	3/8
.750	5/8	T007	40-1295	3/8
1.000	3/4	T008	40-1300	3/8
GROOVE STYLE				
MIN BORE	SHANK DIA	HEAD ID #	ORDER EDP #	I.C.
.640	1/2	G-640	40-1305	3/8
.750	5/8	G-750	40-1310	3/8

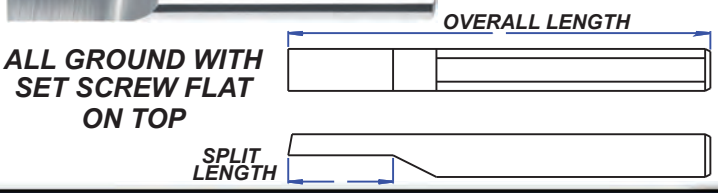
SPLIT BLANKS

SERIES 70 SINGLE END SPLIT BLANKS

APPLICATION : A BLANK THAT THE USER CAN GRIND INTO THEIR OWN SPECIAL TOOL

D.I.A.	ORDER EDP #	TOOL ID #	SPLIT LENGTH	OVERALL LENGTH
1/8	70-1100	SP-125-SGL	1/4	1-1/2”
3/16	70-1105	SP-187-SGL	5/16	2”
1/4	70-1110	SP-250-SGL	3/8	2”
5/16	70-1115	SP-312-SGL	1/2	2”
3/8	70-1120	SP-375-SGL	1/2	2”
1/2	70-1125	SP-500-SGL	5/8	2-1/2”

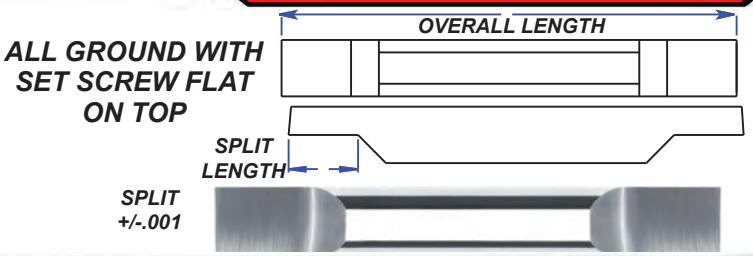




SERIES 70 DOUBLE END SPLIT BLANKS

APPLICATION : A DOUBLE END BLANK THAT THE USER CAN GRIND INTO THEIR OWN SPECIAL TOOL

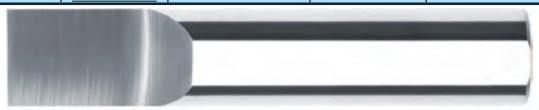
D.I.A.	ORDER EDP #	TOOL ID #	SPLIT LENGTH	OVERALL LENGTH
1/8	70-1200	SP-125-DBL	1/4	2”
3/16	70-1205	SP-187-DBL	5/16	2-1/2”
1/4	70-1210	SP-250-DBL	3/8	2-1/2”
5/16	70-1215	SP-312-DBL	1/2	2-1/2”
3/8	70-1220	SP-375-DBL	1/2	2-1/2”
1/2	70-1225	SP-500-DBL	5/8	3”

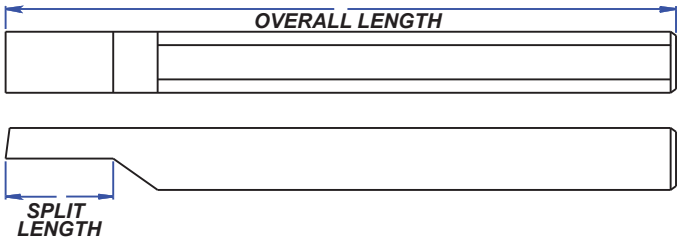


SERIES 70 LONG LENGTH SINGLE END SPLIT BLANKS

APPLICATION : A LONG BLANK THAT THE USER CAN GRIND INTO THEIR OWN SPECIAL TOOL

D.I.A.	ORDER EDP #	TOOL ID #	SPLIT LENGTH	OVERALL LENGTH
1/8	70-1400	SP-125-LNG	3/8	4”
3/16	70-1405	SP-187-LNG	3/8	4”
1/4	70-1410	SP-250-LNG	3/8	4”
5/16	70-1415	SP-312-LNG	1/2	4”
3/8	70-1420	SP-375-LNG	1/2	6”
1/2	70-1425	SP-500-LNG	5/8	6”

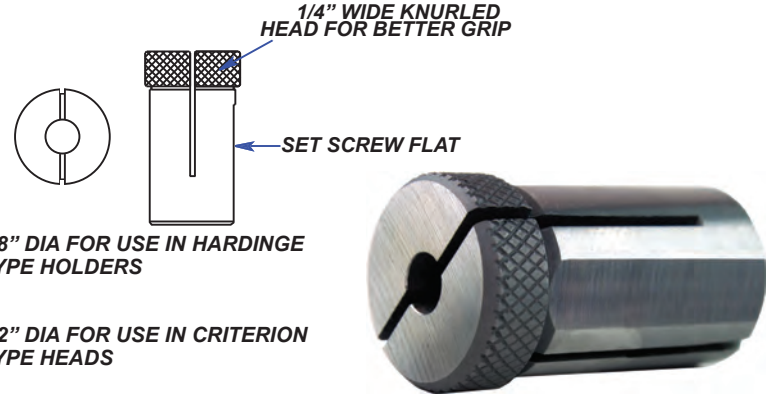




SERIES 94 SPLIT BUSHING

APPLICATION : USED TO HOLD OUR BORING & GROOVING TOOLS

D.I.A.	BUSHING ID #	ORDER EDP #	OUTSIDE D.I.A.	OVERALL LENGTH
1/8	SB-125	94-1100	5/8	1-1/4”
3/16	SB-187	94-1105		
1/4	SB-250	94-1110		
5/16	SB-312	94-1115		
3/8	SB-375	94-1120		
7/16	SB-437	94-1125		
1/2	SB-500	94-1130		
1/8	SB-125-5	94-1135	1/2	1-1/4”
3/16	SB-187-5	94-1140		
1/4	SB-250-5	94-1145		
5/16	SB-312-5	94-1150		
3/8	SB-375-5	94-1155		



5/8” DIA FOR USE IN HARDINGE TYPE HOLDERS

1/2” DIA FOR USE IN CRITERION TYPE HEADS

ITI CARBIDE: FOR EXTRA LONG TOOL LIFE

ITI Carbide Cutting Tools

SERIES 42 QUICK CHANGE FACE GROOVE

QUICK CHANGE FACE GROOVERS

APPLICATION : USED TO CREATE ANY FACE GROOVE WITH A MAJOR DIAMETER GREATER THAN 3/16"

SQUARE NOSE

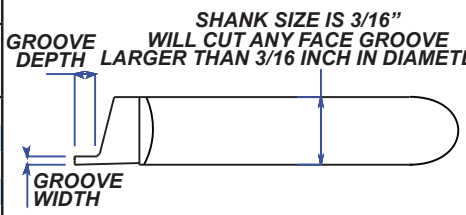
GROOVE WIDTH	GROOVE DEPTH	ORDER EDP #	ALTIN COATED EDP #
.017	.040	42-8600	42-8600-C
.025	.065	42-8605	42-8605-C
.032	.080	42-8610	42-8610-C
.063	.150	42-8615	42-8615-C
.094	.200	42-8620	42-8620-C
.125	.200	42-8625	42-8625-C

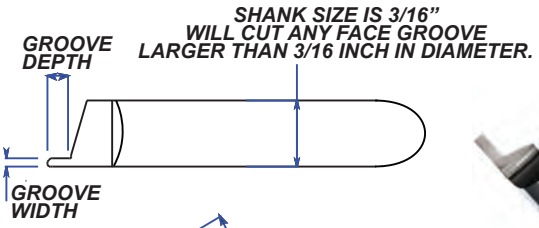
FULL RADIUS NOSE

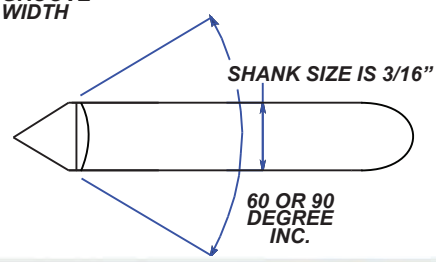
GROOVE WIDTH	GROOVE DEPTH	ORDER EDP #	ALTIN COATED EDP #
.017	.040	42-9600	42-9600-C
.025	.065	42-9605	42-9605-C
.032	.080	42-9610	42-9610-C
.063	.150	42-9615	42-9615-C
.094	.200	42-9620	42-9620-C
.125	.200	42-9625	42-9625-C

DOUBLE ANGLE

INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #
60°	42-4000	42-4000-C
90°	42-4500	42-4500-C







SERIES 42 HOLDER



THIS TOOL USES THE SERIES 42 HOLDERS AS SEEN ON PAGE 12

New!



Quick Change Tools Are Also Available For Boring, Threading, Profiling And Grooving. See Pages 12,41,51 And, 30-31.

SERIES 73 SINGLE END FACE/OD GROOVE TOOLS

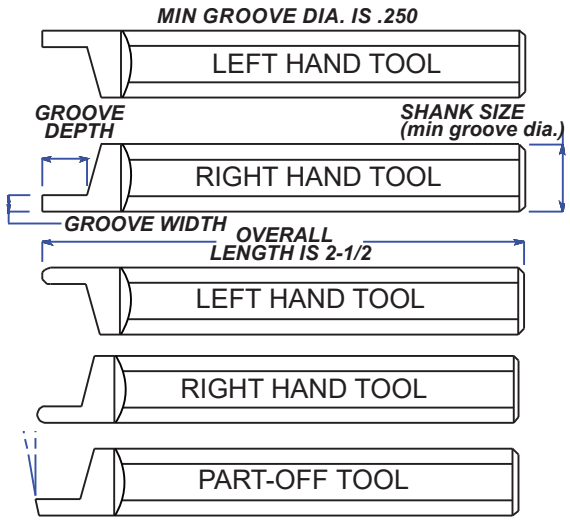
APPLICATION : SIMILAR TO ABOVE EXCEPT SINGLE END. LONGER SHANKS WITH LARGER DIAMETERS AND GREATER DEPTHS OF CUT. CAN ALSO BE USED FOR OD GROOVING

MIN DIA	GROOVE WIDTH	GROOVE DEPTH	RIGHT HAND SQUARE NOSE ORDER EDP #	RIGHT HAND SQUARE NOSE ALTIN COATED EDP #	LEFT HAND SQUARE NOSE ORDER EDP #	LEFT HAND SQUARE NOSE ALTIN COATED EDP #
1/4	.017	.040	73-4900	73-4900-C	73-7490	73-7490-C
	.025	.065	73-4950	73-4950-C	73-7495	73-7495-C
	.032	.095	73-5000	73-5000-C	73-7500	73-7500-C
	.063	.180	73-5005	73-5005-C	73-7505	73-7505-C
	.094	.250	73-5010	73-5010-C	73-7510	73-7510-C
	.125	.280	73-5015	73-5015-C	73-7515	73-7515-C
	.187	.300	73-5020	73-5020-C	73-7520	73-7520-C
3/8	.250	.375	73-5025	73-5025-C	73-7525	73-7525-C
	.312	.500	73-5030	73-5030-C	73-7530	73-7530-C
	.370	.600	73-5035	73-5035-C	73-7535	73-7535-C

MIN DIA	GROOVE WIDTH	GROOVE DEPTH	RIGHT HAND FULL RADIUS ORDER EDP #	RIGHT HAND FULL RADIUS ALTIN COATED EDP #	LEFT HAND FULL RADIUS ORDER EDP #	LEFT HAND FULL RADIUS ALTIN COATED EDP #
1/4	.017	.040	73-5900	73-5900-C	73-7900	73-7900-C
	.025	.065	73-5950	73-5950-C	73-7950	73-7950-C
	.032	.095	73-6000	73-6000-C	73-8000	73-8000-C
	.063	.180	73-6005	73-6005-C	73-8005	73-8005-C
	.094	.250	73-6010	73-6010-C	73-8010	73-8010-C
	.125	.280	73-6015	73-6015-C	73-8015	73-8015-C
	.187	.300	73-6020	73-6020-C	73-8020	73-8020-C
3/8	.250	.375	73-6025	73-6025-C	73-8025	73-8025-C
	.312	.500	73-6030	73-6030-C	73-8030	73-8030-C
	.370	.600	73-6035	73-6035-C	73-8035	73-8035-C

PART-OFF NOSE

MIN DIA	GROOVE WIDTH	GROOVE DEPTH	ORDER EDP #	ALTIN COATED EDP #
1/4	.094	.325	73-7000	73-7000-C
	.125	.400	73-7020	73-7020-C
3/8	.187	.500	73-7030	73-7030-C



TOOLS ARE ROUND SHANK AND CAN BE HELD IN A COLLET BUT FOR EASE OF USE AND FASTER TOOL CHANGES WE RECOMMEND OUR SERIES 98 HOLDER SHOWN ON PAGE 14

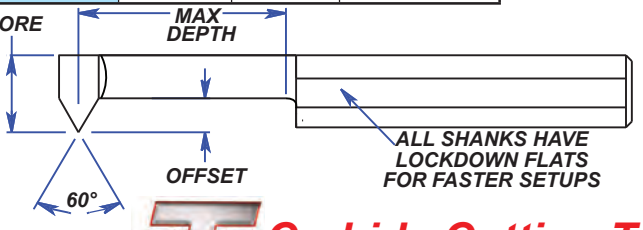


SERIES 30 RIGHT HAND THREADING TOOLS

APPLICATION : RIGHT HAND ID THREADING

MIN BORE	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL I.D.	OFFSET	SHANK & O.A.L.	THREADS PER INCH
.060	.150	30-1340	30-1340-C	T-60-150	.020	1/8 x 2”	40 TO 76
	.200	30-1345	30-1345-C	T-60-200			
	.300	30-1350	30-1350-C	T-60-300			
.080	.300	30-1351	30-1351-C	T-080-300	.020	1/8 x 2”	32 TO 76
	.400	30-1352	30-1352-C	T-080-400			
	.500	30-1353	30-1353-C	T-080-500			
.090	.200	30-1355	30-1355-C	T-90-200	.025	1/8 x 2”	32 TO 76
	.300	30-1360	30-1360-C	T-90-300			
	.400	30-1365	30-1365-C	T-90-400			
.120	.300	30-1370	30-1370-C	T-120-300	.030	3/16 x 2-1/2”	24 TO 56
	.400	30-1375	30-1375-C	T-120-400			
	.500	30-1380	30-1380-C	T-120-500			
.140	.300	30-1385	30-1385-C	T-140-300	.035	3/16 x 2-1/2”	20 TO 56
	.400	30-1390	30-1390-C	T-140-400			
	.500	30-1395	30-1395-C	T-140-500			
.160	.400	30-1396	30-1396-C	T-160-400	.040	3/16 x 2-1/2”	20 TO 56
	.500	30-1397	30-1397-C	T-160-500			
	.750	30-1398	30-1398-C	T-160-750			
	1.000	30-1399	30-1399-C	T-160-1000			
.180	.350	30-1400	30-1400-C	T-180-350	.040	1/4 x 2-1/2”	18 TO 56
	.500	30-1405	30-1405-C	T-180-500			
	.750	30-1410	30-1410-C	T-180-750			
	1.000	30-1415	30-1415-C	T-180-1000			
.200	.400	30-1420	30-1420-C	T-200-400	.045	1/4 x 2-1/2”	16 TO 40
	.600	30-1425	30-1425-C	T-200-600			
	.750	30-1430	30-1430-C	T-200-750			
	1.000	30-1435	30-1435-C	T-200-1000			
.230	.400	30-1440	30-1440-C	T-230-400	.055	5/16 x 2-1/2”	14 TO 40
	.600	30-1445	30-1445-C	T-230-600			
	.750	30-1450	30-1450-C	T-230-750			
	1.000	30-1455	30-1455-C	T-230-1000			
	1.500	30-1460	30-1460-C	T-230-1500			
.290	.500	30-1465	30-1465-C	T-290-500	.070	5/16 x 2-1/2”	12 TO 40
	.750	30-1470	30-1470-C	T-290-750			
	1.000	30-1475	30-1475-C	T-290-1000			
	1.250	30-1480	30-1480-C	T-290-1250			
	1.500	30-1482	30-1482-C	T-290-1500			
	1.750	30-1485	30-1485-C	T-290-1750			
.320	.500	30-1490	30-1490-C	T-320-500	.075	3/8 x 2-1/2”	10 TO 32
	.750	30-1495	30-1495-C	T-320-750			
	1.000	30-1500	30-1500-C	T-320-1000			
	1.250	30-1505	30-1505-C	T-320-1250			
	1.500	30-1507	30-1507-C	T-320-1500			
	1.800	30-1510	30-1510-C	T-320-1800			
.360	.500	30-1515	30-1515-C	T-360-500	.085	3/8 x 2-1/2”	10 TO 32
	.750	30-1520	30-1520-C	T-360-750			
	1.000	30-1525	30-1525-C	T-360-1000			
	1.250	30-1530	30-1530-C	T-360-1250			
	1.500	30-1532	30-1532-C	T-360-1500			
	1.800	30-1535	30-1535-C	T-360-1800			
.490	.750	30-1540	30-1540-C	T-490-750	.120	1/2 x 3”	8 TO 24
	1.000	30-1542	30-1542-C	T-490-1000			
	1.500	30-1545	30-1545-C	T-490-1500			
	2.000	30-1550	30-1550-C	T-490-2000			





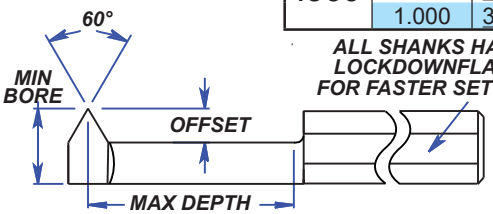
OVER 6000 TOOLS NOW AVAILABLE

Carbide Cutting Tools

SERIES 31 LEFT HAND THREADING TOOLS

APPLICATION : LEFT HAND AND EXTERNAL THREADING

MIN BORE	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL I.D.	OFFSET	SHANK & OVERALL LENGTH	THREADS PER INCH
.120	.300	31-1130	31-1130-C	TL-120-300	.030	3/16 x 2-1/2"	24 TO 56
	.400	31-1135	31-1135-C	TL-120-400			
	.500	31-1140	31-1140-C	TL-120-500			
.140	.300	31-1155	31-1155-C	TL-140-300	.035	3/16 x 2-1/2"	20 TO 56
	.400	31-1160	31-1160-C	TL-140-400			
	.500	31-1165	31-1165-C	TL-140-500			
.180	.500	31-1200	31-1200-C	TL-180-500	.040	1/4 x 2-1/2"	18 TO 56
	.750	31-1205	31-1205-C	TL-180-750			
	1.000	31-1210	31-1210-C	TL-180-1000			
.200	.500	31-1215	31-1215-C	TL-200-500	.045	1/4 x 2-1/2"	16 TO 40
	.750	31-1220	31-1220-C	TL-200-750			
	1.000	31-1225	31-1225-C	TL-200-1000			
.230	.500	31-1230	31-1230-C	TL-230-500	.055	5/16 x 2-1/2"	14 TO 40
	.750	31-1235	31-1235-C	TL-230-750			
	1.000	31-1240	31-1240-C	TL-230-1000			
.290	.500	31-1245	31-1245-C	TL-290-500	.070	5/16 x 2-1/2"	12 TO 40
	.750	31-1250	31-1250-C	TL-290-750			
	1.000	31-1255	31-1255-C	TL-290-1000			
.320	.500	31-1260	31-1260-C	TL-320-500	.075	3/8 x 2-1/2"	10 TO 32
	.750	31-1265	31-1265-C	TL-320-750			
	1.000	31-1270	31-1270-C	TL-320-1000			
.360	.500	31-1275	31-1275-C	TL-360-500	.085	3/8 x 2-1/2"	10 TO 32
	.750	31-1280	31-1280-C	TL-360-750			
	1.000	31-1285	31-1285-C	TL-360-1000			



ALL SHANKS HAVE LOCKDOWNFLATS FOR FASTER SETUPS



SERIES 42 QUICK CHANGE THREADING TOOL

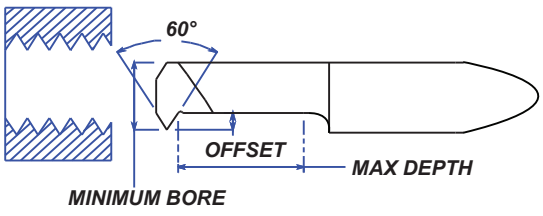
APPLICATION : LOCKED INTO OUR SPECIAL HOLDER MAINTAINING AN EXACT RADIAL AND AXIAL POSITION FOR QUICK TOOL CHANGE

MIN BORE	OFFSET	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	MIN BORE	OFFSET	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #
.060	.025	.200	42-3000	42-3000-C	.160	.045	.200	42-3100	42-3100-C
		.300	42-3005	42-3005-C			.300	42-3105	42-3105-C
.080	.025	.200	42-3010	42-3010-C			.400	42-3110	42-3110-C
		.300	42-3015	42-3015-C			.500	42-3115	42-3115-C
		.400	42-3020	42-3020-C			.600	42-3120	42-3120-C
		.500	42-3025	42-3025-C			.700	42-3125	42-3125-C
.100	.030	.200	42-3030	42-3030-C	.180	.045	.200	42-3130	42-3130-C
		.300	42-3035	42-3035-C			.300	42-3135	42-3135-C
		.400	42-3040	42-3040-C			.400	42-3140	42-3140-C
		.500	42-3045	42-3045-C			.500	42-3145	42-3145-C
.120	.035	.200	42-3050	42-3050-C			.600	42-3150	42-3150-C
		.300	42-3055	42-3055-C			.700	42-3155	42-3155-C
		.400	42-3060	42-3060-C					
		.500	42-3065	42-3065-C					
.140	.040	.200	42-3070	42-3070-C					
		.300	42-3075	42-3075-C					
		.400	42-3080	42-3080-C					
		.500	42-3085	42-3085-C					
		.600	42-3090	42-3090-C					
		.700	42-3095	42-3095-C					



Quick Change Tools Are Also Available For Boring, Profiling, Grooving And Face Grooving. See Pages 12,51, 30-31 And, 39.





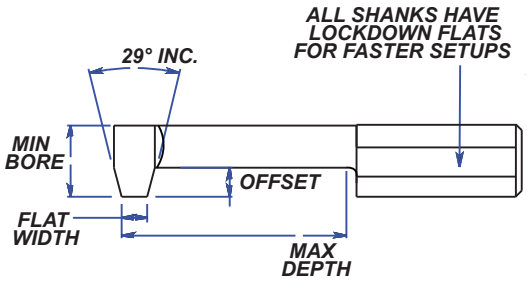
RE-DEFINING THE INDUSTRY STANDARD

Carbide Cutting Tools

SERIES 32 ACME THREADING TOOLS

APPLICATION : ACME ID THREADING

MIN BORE	THREADS PER INCH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	OFFSET	FLAT WIDTH	SHANK & O.A.L.
.180	16	.400	32-1200	32-1200-C	.045	.021	1/4 x 2-1/2”
		.600	32-1205	32-1205-C			
		.750	32-1210	32-1210-C			
		1.000	32-1215	32-1215-C			
.230	14	.500	32-1220	32-1220-C	.055	.024	5/16 x 2-1/2”
		.750	32-1225	32-1225-C			
		1.000	32-1230	32-1230-C			
		1.250	32-1235	32-1235-C			
		1.750	32-1240	32-1240-C			
.290	12	.500	32-1245	32-1245-C	.070	.028	3/8 x 2-1/2”
		.750	32-1250	32-1250-C			
		1.000	32-1255	32-1255-C			
		1.250	32-1260	32-1260-C			
		1.800	32-1265	32-1265-C			
.360	10	.750	32-1270	32-1270-C	.085	.032	3/8 x 2-1/2”
		1.500	32-1275	32-1275-C			
		2.000	32-1280	32-1280-C	.085	.032	3/8 x 3”
.490	8	.750	32-1285	32-1285-C	.120	.041	1/2” x 3”
		1.500	32-1290	32-1290-C			
		2.000	32-1295	32-1295-C			
.490	6	.750	32-1300	32-1300-C	.120	.057	1/2 x 3”
		1.500	32-1305	32-1305-C			
		2.000	32-1310	32-1310-C			
.490	5	.750	32-1315	32-1315-C	.120	.069	1/2 x 3”
		1.500	32-1320	32-1320-C			
		2.000	32-1325	32-1325-C			
.490	4	.750	32-1330	32-1330-C	.150	.088	1/2 x 3”
		1.500	32-1335	32-1335-C			
		2.000	32-1340	32-1340-C			

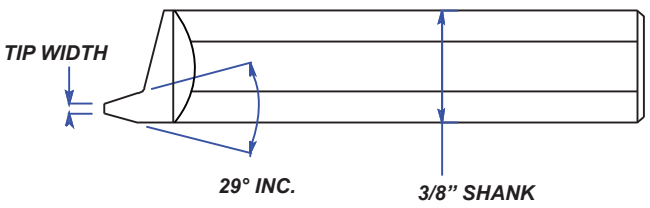




SERIES 33 EXTERNAL ACME THREAD TOOLS

APPLICATION : FOR THREADING ALL TYPES OF MATERIALS



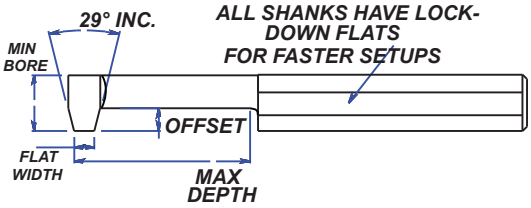


PITCH	TIP WIDTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #
16	.021	33-1000	33-1000-C	EX-16-ACME
14	.024	33-1005	33-1005-C	EX-14-ACME
12	.028	33-1010	33-1010-C	EX-12-ACME
10	.032	33-1015	33-1015-C	EX-10-ACME
8	.041	33-1020	33-1020-C	EX-8-ACME
6	.057	33-1025	33-1025-C	EX-6-ACME
5	.069	33-1030	33-1030-C	EX-5-ACME
4	.088	33-1035	33-1035-C	EX-4-ACME

SERIES 34 STUB ACME THREADING TOOLS

APPLICATION : STUB ACME ID THREADING

MIN BORE	THREADS PER INCH	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	OFFSET	FLAT WIDTH	SHANK
.180	16	.400	34-1400	34-1400-C	.045	.024	1/4 x 2-1/2
		.600	34-1405	34-1405-C			
		.750	34-1410	34-1410-C			
		1.000	34-1415	34-1415-C			
.230	14	.500	34-1420	34-1420-C	.055	.028	5/16 x 2-1/2
		.750	34-1425	34-1425-C			
		1.000	34-1430	34-1430-C			
		1.250	34-1435	34-1435-C			
		1.750	34-1440	34-1440-C			
.290	12	.500	34-1445	34-1445-C	.095	.033	3/8 x 2-1/2”
		.750	34-1450	34-1450-C			
		1.000	34-1455	34-1455-C			
		1.250	34-1460	34-1460-C			
		1.800	34-1465	34-1465-C			
.360	10	.750	34-1470	34-1470-C	.085	.037	3/8 x 2-1/2”
		1.500	34-1475	34-1475-C			
		2.000	34-1480	34-1480-C	.085	.037	3/8 x 3
.490	9	.750	34-1485	34-1485-C	.120	.042	1/2 x 3”
		1.500	34-1490	34-1490-C			
		1.800	34-1495	34-1495-C			
.490	8	.750	34-1500	34-1500-C	.120	.048	1/2 x 3”
		1.500	34-1505	34-1505-C			
		2.000	34-1510	34-1510-C			
.490	7	.750	34-1515	34-1515-C	.120	.055	1/2 x 3”
		1.500	34-1520	34-1520-C			
		2.000	34-1525	34-1525-C			
.490	6	.750	34-1530	34-1530-C	.120	.065	1/2 x 3”
		1.500	34-1535	34-1535-C			
		2.000	34-1540	34-1540-C			
.490	5	.750	34-1545	34-1545-C	.120	.079	1/2 x 3”
		1.500	34-1550	34-1550-C			
		2.000	34-1555	34-1555-C			

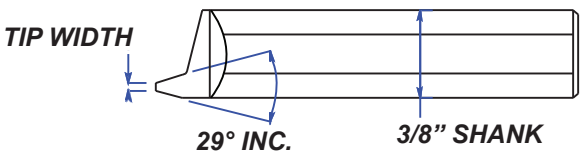




SERIES 33 EXT STUB ACME THREAD TOOLS

APPLICATION : FOR THREADING ALL TYPES OF MATERIALS





PITCH	TIP WIDTH	ORDER EDP #	TOOL ID #
16	.024	33-2000	EX-16-STUB
14	.028	33-2005	EX-14-STUB
12	.033	33-2010	EX-12-STUB
10	.037	33-2015	EX-10-STUB
9	.042	33-2020	EX-9-STUB
8	.048	33-2025	EX-8-STUB
7	.055	33-2030	EX-7-STUB
6	.065	33-2035	EX-6-STUB
5	.079	33-2040	EX-5-STUB

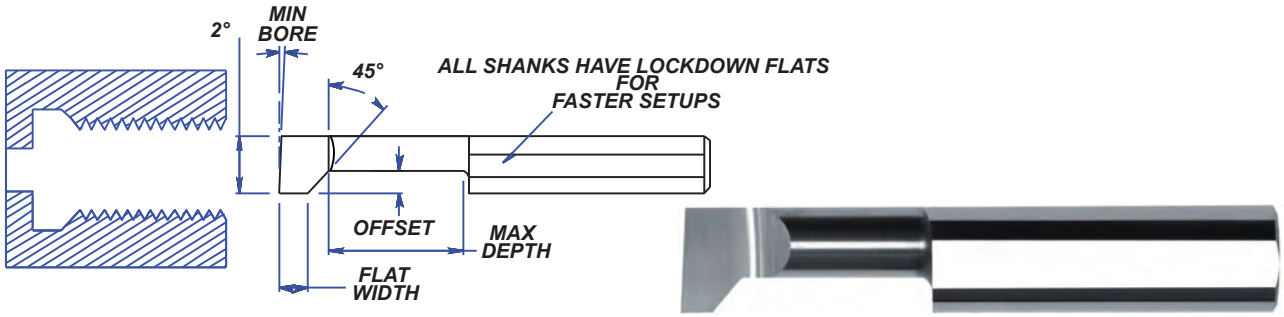
ITI CARBIDE: MAXIMUM SHEAR WITH MINIMUM WEAR

Carbide Cutting Tools

SERIES 46 THREAD RELIEF TOOLS

APPLICATION : FOR PRODUCING A THREAD RELIEF TO KEEP THREADING TOOLS FROM BREAKING

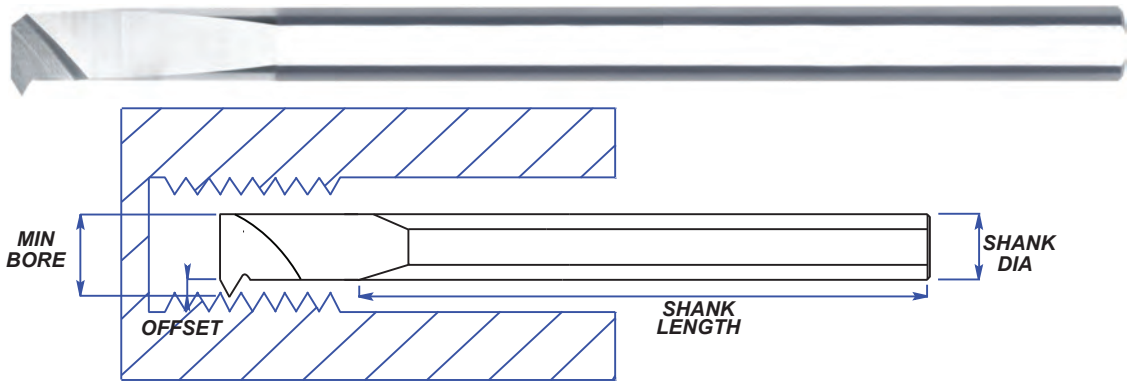
MIN BORE	FLAT WIDTH	OFFSET	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	SHANK & O.A.L.
1/8	.060	.045	.300	46-1100	46-1100-C	TR-125-300	1/8 x 2”
			.400	46-1105	46-1105-C	TR-125-400	
3/16	.080	.060	.400	46-1110	46-1110-C	TR-187-400	3/16 x 2-1/2”
			.800	46-1115	46-1115-C	TR-187-800	
1/4	.095	.050	.500	46-1120	46-1120-C	TR-250-500	1/4 x 2-1/2”
			1.000	46-1125	46-1125-C	TR-250-1000	
5/16	.095	.080	.750	46-1130	46-1130-C	TR-312-750	5/16 x 2-1/2”
			1.250	46-1135	46-1135-C	TR-312-1250	
3/8	.130	.120	.750	46-1140	46-1140-C	TR-375-750	3/8 x 2-1/2”
			1.250	46-1145	46-1145-C	TR-375-1250	
1/2	.160	.130	1.000	46-1150	46-1150-C	TR-500-1000	1/2 x 3”
			1.500	46-1155	46-1155-C	TR-500-1500	



SERIES 08 MULTI-REACH THREADING TOOL

APPLICATION : MULTI-REACH THREADING, NO LONGER LIMITED BY NECK LENGTH

CARBIDE SHANKS PROVIDE MAXIMUM RIGIDITY.



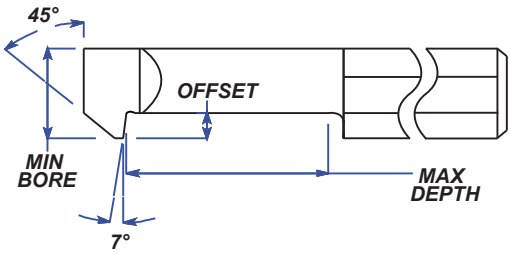
MIN BORE	TOOL ID #	ORDER EDP #	ALTIN COATED EDP #	OFFSET	LARGEST PITCH	SHANK DIA	SHANK LENGTH
.310	LT-310-4	08-1500	08-1500-C	.060	16	1/4	4”
.375	LT-375-4	08-1505	08-1505-C	.060	16	5/16	4”
.460	LT-460-6	08-1510	08-1510-C	.080	11	3/8	6”
.610	LT-610-6	08-1515	08-1515-C	.100	9	1/2	6”
.750	LT-750-6	08-1520	08-1520-C	.120	8	5/8	6”

ITI CARBIDE: TESTED AND PROVEN TO BE THE BEST

iTi Carbide Cutting Tools

SERIES 38 BUTTRESS THREADING TOOLS

APPLICATION : FOR THREADING ALL TYPES OF MATERIALS

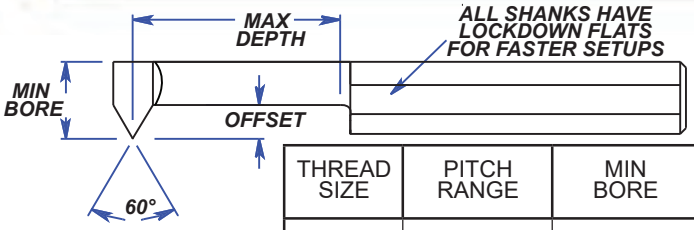


MIN BORE	THREADS PER INCH	OFFSET	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	SHANK & O.A.L.
1/4	20	.050	.375	38-1100	38-1100-C	BU-20-375	1/4 x 2-1/2
			.750	38-1105	38-1105-C	BU-20-750	
5/16	16	.060	.375	38-1110	38-1110-C	BU-16-375	5/16 x 2-1/2
			.750	38-1115	38-1115-C	BU-16-750	
3/8	12	.070	.500	38-1120	38-1120-C	BU-12-500	3/8 x 2-1/2
			1.000	38-1125	38-1125-C	BU-12-1000	
3/8	10	.080	.500	38-1130	38-1130-C	BU-10-500	3/8 x 2-1/2
			1.000	38-1135	38-1135-C	BU-10-1000	
1/2	8	.090	.750	38-1140	38-1140-C	BU-8-750	1/2 x 3”
			1.250	38-1145	38-1145-C	BU-8-1250	
1/2	6	.120	.750	38-1150	38-1150-C	BU-6-750	1/2 x 3”
			1.250	38-1155	38-1155-C	BU-6-1250	



SERIES 30 METRIC THREADING TOOLS

APPLICATION : RIGHT HAND ID THREADING





THREAD SIZE	PITCH RANGE	MIN BORE	MAX DEPTH MM	MAX DEPTH INCH	ORDER EDP #	ALTIN COATED EDP #	OFFSET	SHANK & O.A.L.
2MM	0.20/0.70	1.52 MM	4.0	(.157)	30-1800	30-1800-C	.635	1/8 x 2”
			8.0	(.315)	30-1805	30-1805-C		
3MM	.020/.080	2.28 MM	4.0	(.157)	30-1810	30-1810-C	.762	1/8 x 2”
			8.0	(.315)	30-1815	30-1815-C		
			12.0	(.472)	30-1820	30-1820-C		
4MM	0.20/1.00	3.04 MM	4.0	(.157)	30-1825	30-1825-C	.889	3/16 x 2-1/2”
			8.0	(.315)	30-1830	30-1830-C		
			12.0	(.472)	30-1835	30-1835-C		
5MM	0.20/1.40	4.20 MM	10.0	(.394)	30-1840	30-1840-C	1.27	3/16 x 2-1/2”
			14.0	(.551)	30-1845	30-1845-C		
			18.0	(.709)	30-1850	30-1850-C		
			25.0	(.985)	30-1855	30-1855-C		
6MM	0.20/2.10	5.08 MM	12.0	(.472)	30-1860	30-1860-C	1.90	1/4 x 2-1/2”
			18.0	(.079)	30-1865	30-1865-C		
			25.0	(.985)	30-1870	30-1870-C		
			40.0	(1.576)	30-1875	30-1875-C		
8MM	0.20/2.20	7.36 MM	12.0	(.472)	30-1880	30-1880-C	2.03	5/16 x 2-1/2”
			18.0	(.709)	30-1890	30-1890-C		
			25.0	(.985)	30-1895	30-1895-C		
			40.0	(1.576)	30-1900	30-1900-C		
10MM	0.20/2.20	8.12 MM	12.0	(.472)	30-1905	30-1905-C	1.95	3/8 x 2-1/2”
			18.0	(.709)	30-1910	30-1910-C		
			25.0	(.985)	30-1915	30-1915-C		
			40.0	(1.576)	30-1920	30-1920-C		
12MM 14MM 16MM	0.20/2.50	9.10 MM	12.0	(.472)	30-1925	30-1925-C	2.15	3/8 x 2-1/2”
			18.0	(.709)	30-1930	30-1930-C		
			25.0	(.985)	30-1935	30-1935-C		
			40.0	(1.576)	30-1940	30-1940-C		
18MM 20MM 22MM	0.20/3.50	12.5 MM	12.0	(.472)	30-1945	30-1945-C	3.01	1/2 x 3”
			18.0	(.709)	30-1950	30-1950-C		
			25.0	(.985)	30-1955	30-1955-C		
			40.0	(1.576)	30-1960	30-1960-C		

SERIES 36 INDEXABLE INSERT THREADING BARS

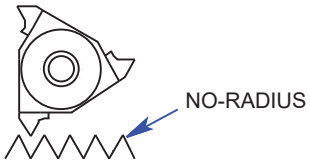
APPLICATION : THREADING BARS WITH 5/32 INSERT I.C.

.236 *MINIMUM BORE*

HEAD ID #	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW #	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #
T001	3/16	5/32	99-1135	S-6	3”	36-1100	36-1105
					6”	36-1110	36-1115

60 DEGREE INSERTS FOR .236 BARS

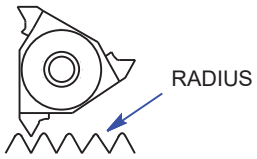
PITCH RANGE	TIN COATED
20-48	37-1300



FULL PROFILE INSERTS FOR .236 BARS

PITCH	ORDER EDP # TIN COATED
32	37-1304
28	37-1308
24	37-1312
20	37-1316
18	37-1320





SERIES 36 INDEXABLE INSERT THREADING BARS

APPLICATION : THREADING BARS WITH 3/16 INSERT I.C.



.307 *MINIMUM BORE*

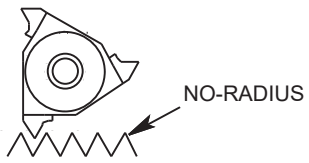
HEAD ID #	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW #	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T002	1/4	3/16	99-1145	S-8	3”	36-1120	36-1125	36-1130
					6”	36-1135	36-1140	36-1145

.354 *MINIMUM BORE*

HEAD ID #	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW #	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T003	5/16	3/16	99-1145	S-8	3”	36-1150	36-1155	36-1160
					6”	36-1165	36-1170	36-1175

3/16 I.C. 60 DEGREE INSERTS FOR .307 & .354 BARS

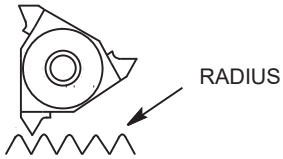
PITCH RANGE	TIN COATED
16-48	37-1324



3/16 I.C. FULL PROFILE INSERTS FOR .307 & .354 BARS

PITCH	ORDER EDP # TIN COATED
32	37-1328
28	37-1332
24	37-1336
20	37-1340
18	37-1344
16	37-1348





ITI CARBIDE: SIMPLY UN-COMPARABLE

Carbide Cutting Tools

APPLICATION : THREADING BARS WITH 1/4 INSERT I.C.



.390 *MINIMUM BORE*

HEAD ID #	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW #	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T003.5	5/16	1/4	99-1150	S-11	3”	36-1180	36-1185	36-1190
					6”	36-1200	36-1205	36-1210

.470 *MINIMUM BORE*

HEAD ID #	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW #	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T004	3/8	1/4	99-1150	S-11	3”	36-1215	36-1220	36-1225
					6”	36-1230	36-1235	36-1240

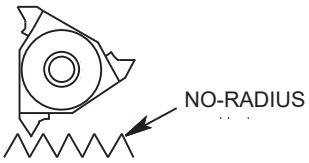
.625 *MINIMUM BORE*

HEAD ID #	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW #	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T005	1/2	1/4	99-1150	S-11	3”	36-1245	36-1250	36-1255
					6”	36-1260	36-1265	36-1270

60 DEGREE INSERTS FOR .390, .470 & .625 BARS

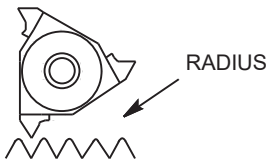
PITCH RANGE	TIN COATED
16-48	37-1368

PITCH RANGE	UN-COATED
16-48	37-1666



FULL PROFILE INSERTS FOR .390, .470 & .625 BARS

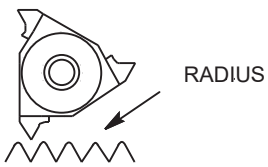
PITCH	ORDER EDP# UN-COATED C-2	ORDER EDP # TIN COATED
36	37-1370	37-1372
32	37-1374	37-1376
28	37-1378	37-1380
24	37-1382	37-1384
20	37-1383	37-1385
18	37-1386	37-1388
16	37-1390	37-1392
14	37-1394	37-1396
13	37-1398	37-1400
12	37-1401	37-1403
11	37-1405	37-1407





PIPE THREAD INSERTS FOR .390, .470 & .625 BARS

PITCH	ORDER EDP# UN-COATED C-2	ORDER EDP # TIN COATED
27	37-1402	37-1404
18	37-1406	37-1408



SERIES 36 INDEXABLE INSERT THREADING BARS

APPLICATION : THREADING BARS WITH 3/8 INSERT I.C.

.640 *MINIMUM BORE*

HEAD ID #	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW #	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T006	1/2	3/8	99-1155	S-16-S	3”	36-1275	36-1280	36-1285
					6”	36-1290	36-1295	36-1300
					9”	36-1305	36-1310	36-1315

.750 *MINIMUM BORE*

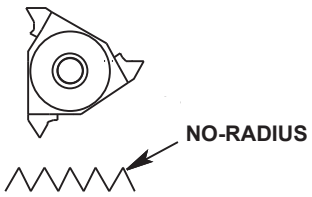
HEAD ID #	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW #	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T007	5/8	3/8	99-1160	S-16	3”	36-1320	36-1325	36-1330
					6”	36-1335	36-1340	36-1345
					9”	36-1350	36-1355	36-1360

1” *MINIMUM BORE*

HEAD ID #	SHANK DIA	INSERT I.C.	SCREW EDP #	SCREW #	SHANK LENGTH	SHANK STYLES: STEEL SHANK ORDER EDP #	SHANK STYLES: CARBIDE SHANK ORDER EDP #	SHANK STYLES: CARBIDE WITH COOLANT HOLE ORDER EDP #
T008	3/4	3/8	99-1160	S-16	3”	36-1365	36-1370	36-1375
					6”	36-1380	36-1385	36-1390
					9”	36-1395	36-1400	36-1405

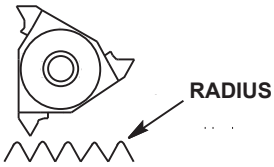
60 DEGREE INSERTS FOR .640 .750 & 1” BARS

PITCH RANGE	ORDER EDP# UN-COATED C-2	ORDER EDP # TIN COATED
16-48	37-1410	37-1412
8-48	37-1414	37-1416
8-14	37-1415	37-1417



FULL PROFILE INSERTS FOR .640 .750 & 1” BARS

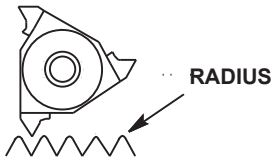
PITCH	ORDER EDP# UN-COATED C-2	ORDER EDP # TIN COATED
36	37-1418	37-1420
32	37-1422	37-1424
28	37-1426	37-1428
24	37-1430	37-1432
20	37-1434	37-1436
18	37-1438	37-1440
16	37-1442	37-1444
14	37-1446	37-1448
12	37-1450	37-1452
10	37-1454	37-1456
8	37-1458	37-1460





PIPE THREAD INSERTS FOR .640 .750 & 1” BARS

PITCH	ORDER EDP# UN-COATED C-2	ORDER EDP # TIN COATED
27	37-1462	37-1464
18	37-1466	37-1468
14	37-1470	37-1472
11-12	37-1474	37-1476
8	37-1478	37-1480





SERIES 63 CARBIDE COUNTERSINKS

APPLICATION : FOR COUNTER SINKING HOLES

INC ANGLE	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	O.A.L.
60°	63-3000	63-3000-C	.250	2-1/2"
	63-5000	63-5000-C	.375	2-1/2"
	63-6000	63-6000-C	.500	3"
82°	63-3100	63-3100-C	.250	2-1/2"
	63-5100	63-5100-C	.375	2-1/2"
	63-6100	63-6100-C	.500	3"
90°	63-3200	63-3200-C	.250	2-1/2"
	63-5200	63-5200-C	.375	2-1/2"
	63-6200	63-6200-C	.500	3"

6 FLUTE DOUBLE END CHATTER FREE STYLE



SERIES 61 RUNNER CUTTERS

APPLICATION : FOR MACHINING TAPERS OR RELIEFS

SHANK DIA.	TIP RADIUS	TAPER PER SIDE	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	LENGTH OF CUT	O.A.L.
1/8	.031	3°	61-1200	61-1200-C	RU-125-3	.590	2"
		5°	61-1250	61-1250-C	RU-125-5	.370	
		10°	61-1300	61-1300-C	RU-125-10	.175	
3/16	.039	3°	61-1350	61-1350-C	RU-187-3	.750	2-1/2"
		5°	61-1400	61-1400-C	RU-187-5	.620	
		10°	61-1450	61-1450-C	RU-187-10	.310	
1/4	.047	3°	61-1500	61-1500-C	RU-250-3	1.000	2-1/2"
		5°	61-1550	61-1550-C	RU-250-5	.890	
		10°	61-1600	61-1600-C	RU-250-10	.442	
5/16	.062	3°	61-1650	61-1650-C	RU-312-3	1.100	2-1/2"
		5°	61-1700	61-1700-C	RU-312-5	1.060	
		10°	61-1750	61-1750-C	RU-312-10	.530	
3/8	.078	3°	61-1800	61-1800-C	RU-375-3	1.375	3"
		5°	61-1850	61-1850-C	RU-375-5	1.240	
		10°	61-1900	61-1900-C	RU-375-10	.610	
1/2	.094	3°	61-1950	61-1950-C	RU-500-3	3.062	4"
		5°	61-2000	61-2000-C	RU-500-5	2.310	
		10°	61-2050	61-2050-C	RU-500-10	.850	

SPECIAL SIZES AVAILABLE ON REQUEST

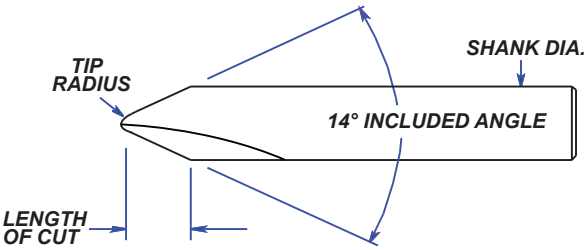


SERIES 60 DIE SINKERS

APPLICATION : FOR DIE SINKING OR RELIEF WORK



SHANK DIA.	TIP RADIUS	LENGTH OF CUT	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	O.A.L.
1/8	.032	5/16	60-1400	60-1400-C	A7-312-B	2"
5/32	.040	5/16	60-1405	60-1405-C	A7-313-B	2"
3/16	.046	3/8	60-1410	60-1410-C	A7-375-B	2-1/2"
1/4	.062	1/2	60-1415	60-1415-C	A7-500-B	2-1/2"
5/16	.078	5/8	60-1420	60-1420-C	A7-625-B	2-1/2"
3/8	.093	3/4	60-1425	60-1425-C	A7-750-B	2-1/2"
7/16	.109	7/8	60-1430	60-1430-C	A7-875-B	2-1/2"
1/2	.125	1"	60-1435	60-1435-C	A7-1000-B	3"



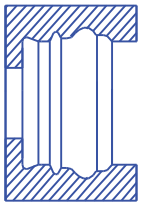
SPECIAL SIZES AVAILABLE ON REQUEST

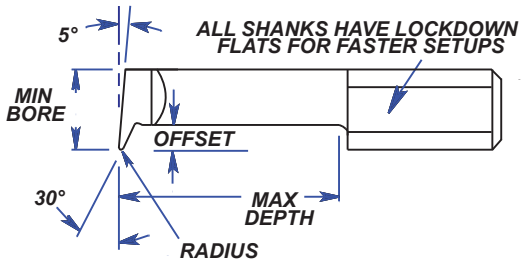
SERIES 56 PROFILE TOOLS

APPLICATION : STANDARD PROFILING TOOL

MIN BORE	TIP RADIUS	OFFSET	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	SHANK & O.A.L.
.090	.005	.040	.200	56-1000	56-1000-C	1/8 x 2”
			.300	56-1005	56-1005-C	
			.400	56-1010	56-1010-C	
.120	.007	.050	.250	56-1080	56-1080-C	1/8 x 2”
			.500	56-1085	56-1085-C	
			.750	56-1090	56-1090-C	
.180	.010	.080	.500	56-1100	56-1100-C	3/16 x 2-1/2”
			.750	56-1105	56-1105-C	
			1.000	56-1110	56-1110-C	
.220	.010	.080	.500	56-1115	56-1115-C	1/4 x 2-1/2”
			.750	56-1120	56-1120-C	
			1.000	56-1125	56-1125-C	
.300	.015	.110	.500	56-1130	56-1130-C	5/16 x 2-1/2”
			.750	56-1135	56-1135-C	
			1.000	56-1140	56-1140-C	
.360	.015	.130	.500	56-1145	56-1145-C	3/8 x 2-1/2”
			.750	56-1150	56-1150-C	
			1.000	56-1155	56-1155-C	
			1.250	56-1160	56-1160-C	
.490	.015	.160	.500	56-1165	56-1165-C	1/2 x 3”
			.750	56-1170	56-1170-C	
			1.000	56-1175	56-1175-C	
			1.250	56-1180	56-1180-C	





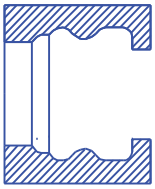


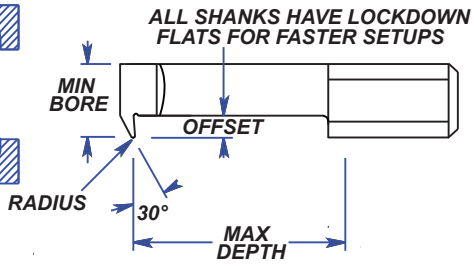
SERIES 56 REVERSE PROFILE TOOLS

APPLICATION : REVERSE PROFILING TOOL

MIN BORE	TIP RADIUS	OFFSET	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	SHANK & O.A.L.
.180	.010	.080	.500	56-1500	56-1500-C	3/16 x 2-1/2”
			.750	56-1505	56-1505-C	
			1.000	56-1510	56-1510-C	
.220	.010	.080	.500	56-1515	56-1515-C	1/4 x 2-1/2”
			.750	56-1520	56-1520-C	
			1.000	56-1525	56-1525-C	
.300	.015	.110	.500	56-1530	56-1530-C	5/16 x 2-1/2”
			.750	56-1535	56-1535-C	
			1.000	56-1540	56-1540-C	
.360	.015	.130	.500	56-1545	56-1545-C	3/8 x 2-1/2”
			.750	56-1550	56-1550-C	
			1.000	56-1555	56-1555-C	
			1.250	56-1560	56-1560-C	
.490	.015	.160	.500	56-1565	56-1565-C	1/2 x 3”
			.750	56-1570	56-1570-C	
			1.000	56-1575	56-1575-C	
			1.250	56-1580	56-1580-C	







SERIES 09 MULTI-REACH PROFILE TOOL

APPLICATION : MULTI-REACH PROFILING
NO LONGER LIMITED BY NECK LENGTH



MIN BORE	ORDER EDP #	ALTIN COATED EPD #	OFFSET	RADIUS	SHANK DIA	SHANK LENGTH
.360	09-1400	09-1400-C	.100	.010	1/4	4”
.420	09-1405	09-1405-C	.100	.015	5/16	4”
.480	09-1410	09-1410-C	.100	.015	3/8	6”
.615	09-1415	09-1415-C	.110	.015	1/2	6”
.750	09-1420	09-1420-C	.125	.020	5/8	6”

SERIES 42 QUICK CHANGE PROFILER

APPLICATION: QUICK CHANGE, REPLACE TOOLS QUICKLY AND ACCURATELY

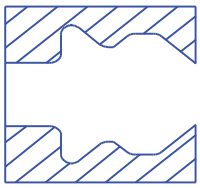
MIN BORE	TIP RADIUS	OFFSET	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #
.080	.005	.040	.200	42-5000	42-5000-C
			.300	42-5005	42-5005-C
.100	.005	.040	.200	42-5010	42-5010-C
			.300	42-5015	42-5015-C
.120	.007	.050	.200	42-5020	42-5020-C
			.300	42-5025	42-5025-C
			.400	42-5030	42-5030-C
			.500	42-5035	42-5035-C
			.600	42-5040	42-5040-C
			.700	42-5045	42-5045-C
.140	.007	.050	.200	42-5050	42-5050-C
			.300	42-5055	42-5055-C
			.400	42-5060	42-5060-C
			.500	42-5065	42-5065-C
			.600	42-5070	42-5070-C
			.700	42-5075	42-5075-C

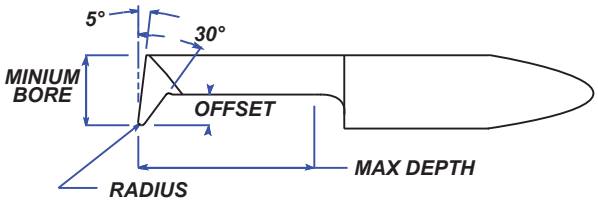
MIN BORE	TIP RADIUS	OFFSET	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #
.160	.007	.060	.200	42-5080	42-5080-C
			.300	42-5085	42-5085-C
			.400	42-5090	42-5090-C
			.500	42-5095	42-5095-C
			.600	42-5100	42-5100-C
			.700	42-5105	42-5105-C
.180	.007	.060	.200	42-5110	42-5110-C
			.300	42-5115	42-5115-C
			.400	42-5120	42-5120-C
			.500	42-5125	42-5125-C
			.600	42-5130	42-5130-C
			.700	42-5135	42-5135-C

Also Available For Boring, Threading, Grooving And Face Grooving.
See Pages 12,41, 30-31 And, 39.





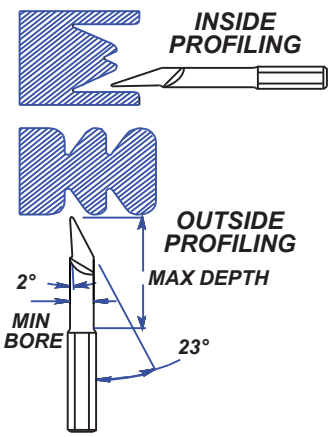




SERIES 56 FINE POINT PROFILE TOOLS

APPLICATION : FINE POINT PROFILING TOOL



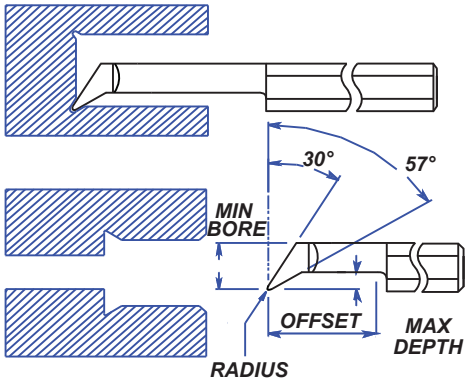


MIN BORE	TIP RADIUS	OFFSET	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	SHANK & O.A.L.
.220	.010	.020	.500	56-1315	56-1315-C	FIP-220-500	1/4 x 2-1/2”
			.750	56-1320	56-1320-C	FIP-220-750	
			1.000	56-1325	56-1325-C	FIP-220-1000	
.300	.015	.020	.750	56-1330	56-1330-C	FIP-300-750	5/16 x 2-1/2”
			1.000	56-1335	56-1335-C	FIP-300-1000	
.360	.015	.020	.750	56-1340	56-1340-C	FIP-360-750	3/8 x 2-1/2”
			1.000	56-1345	56-1345-C	FIP-360-1000	
			1.250	56-1350	56-1350-C	FIP-360-1250	
.490	.015	.020	1.000	56-1360	56-1360-C	FIP-490-1000	1/2 x 3”
			1.250	56-1365	56-1365-C	FIP-490-1250	
			1.500	56-1370	56-1370-C	FIP-490-1500	

SERIES 56 R.H. OFFSET PROFILE TOOLS

APPLICATION : RIGHT HAND OFFSET PROFILING TOOL



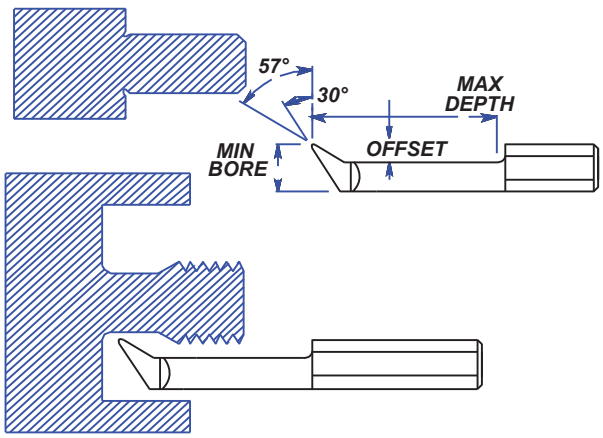


MIN BORE	TIP RADIUS	OFFSET	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	SHANK & O.A.L.
.220	.010	.080	.500	56-1815	56-1815-C	ROP-220-500	1/4 x 2-1/2"
			.750	56-1820	56-1820-C	ROP-220-750	
			1.000	56-1825	56-1825-C	ROP-220-1000	
.300	.015	.110	.500	56-1830	56-1830-C	ROP-300-500	5/16 x 2-1/2"
			.750	56-1835	56-1835-C	ROP-300-750	
			1.000	56-1840	56-1840-C	ROP-300-1000	
.360	.015	.130	.500	56-1845	56-1845-C	ROP-360-500	3/8 x 2-1/2"
			.750	56-1850	56-1850-C	ROP-360-750	
			1.000	56-1855	56-1855-C	ROP-360-1000	
			1.250	56-1860	56-1860-C	ROP-360-1250	
.490	.015	.160	.500	56-1865	56-1865-C	ROP-490-500	1/2 x 3"
			.750	56-1870	56-1870-C	ROP-490-750	
			1.000	56-1875	56-1875-C	ROP-490-1000	
			1.250	56-1880	56-1880-C	ROP-490-1250	

SERIES 56 L.H. OFFSET PROFILE TOOLS

APPLICATION : LEFT HAND OFFSET PROFILING TOOL

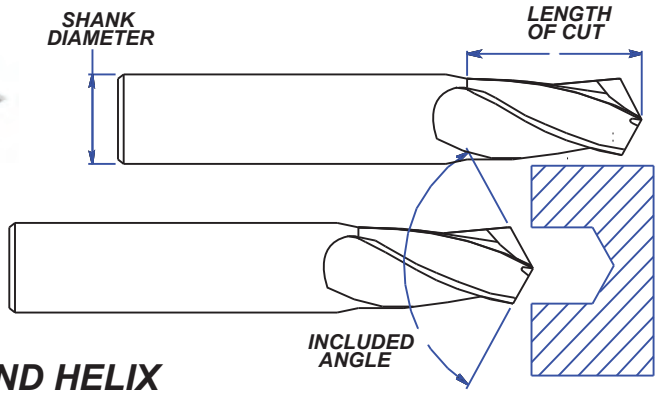
MIN BORE	TIP RADIUS	OFFSET	MAX DEPTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	SHANK & O.A.L.
.220	.010	.080	.500	56-1915	56-1915-C	LOP-220-500	1/4 x 2-1/2"
			.750	56-1920	56-1920-C	LOP-220-750	
			1.000	56-1925	56-1925-C	LOP-220-1000	
.300	.015	.110	.500	56-1930	56-1930-C	LOP-300-500	5/16 x 2-1/2"
			.750	56-1935	56-1935-C	LOP-300-750	
			1.000	56-1940	56-1940-C	LOP-300-1000	
.360	.015	.130	.500	56-1945	56-1945-C	LOP-360-500	3/8 x 2-1/2"
			.750	56-1950	56-1950-C	LOP-360-750	
			1.000	56-1955	56-1955-C	LOP-360-1000	
			1.250	56-1960	56-1960-C	LOP-360-1250	
.490	.015	.160	.500	56-1965	56-1965-C	LOP-490-500	1/2 x 3"
			.750	56-1970	56-1970-C	LOP-490-750	
			1.000	56-1975	56-1975-C	LOP-490-1000	
			1.250	56-1980	56-1980-C	LOP-490-1250	





APPLICATION : DRILL & MILL WITH ONE TOOL





New!

30° RIGHT HAND HELIX

2 FLUTE 60° INCLUDED ANGLE

SIZE	2 FLUTE EDP #	ALTIN COATED EDP #	LENGTH OF CUT	OVERALL LENGTH	SHANK DIA
.125	49-2015	49-2015-C	5/8”	2”	1/8
.187	49-2065	49-2065-C	3/4”	2-1/2”	3/16
.218	49-2115	49-2115-C	3/4”	2-1/2”	1/4
.250	49-2165	49-2165-C	1”	3”	1/4
.281	49-2215	49-2215-C	1”	3”	5/16
.312	49-2265	49-2265-C	1”	3”	5/16
.343	49-2315	49-2315-C	1”	3”	3/8
.375	49-2365	49-2365-C	1”	3”	3/8
.406	49-2415	49-2415-C	1”	3”	7/16
.437	49-2465	49-2465-C	1”	3”	7/16
.468	49-2515	49-2515-C	1”	3”	1/2
.500	49-2565	49-2565-C	1”	3”	1/2

2 FLUTE 82° INCLUDED ANGLE

SIZE	2 FLUTE EDP #	ALTIN COATED EDP #	LENGTH OF CUT	OVERALL LENGTH	SHANK DIA
.125	49-2010	49-2010-C	5/8”	2”	1/8
.187	49-2060	49-2060-C	3/4”	2-1/2”	3/16
.218	49-2110	49-2110-C	3/4”	2-1/2”	1/4
.250	49-2160	49-2160-C	1”	3”	1/4
.281	49-2210	49-2210-C	1”	3”	5/16
.312	49-2260	49-2260-C	1”	3”	5/16
.343	49-2310	49-2310-C	1”	3”	3/8
.375	49-2360	49-2360-C	1”	3”	3/8
.406	49-2410	49-2410-C	1”	3”	7/16
.437	49-2460	49-2460-C	1”	3”	7/16
.468	49-2510	49-2510-C	1”	3”	1/2
.500	49-2560	49-2560-C	1”	3”	1/2

2 FLUTE 90° INCLUDED ANGLE

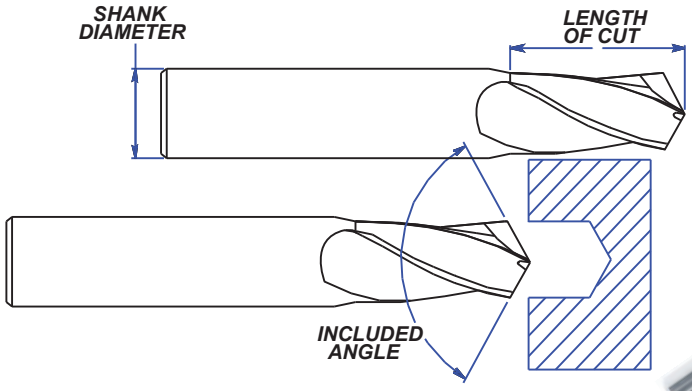
SIZE	2 FLUTE EDP #	ALTIN COATED EDP #	LENGTH OF CUT	OVERALL LENGTH	SHANK DIA
.125	49-2005	49-2005-C	5/8”	2”	1/8
.187	49-2055	49-2055-C	3/4”	2-1/2”	3/16
.218	49-2105	49-2105-C	3/4”	2-1/2”	1/4
.250	49-2155	49-2155-C	1”	3”	1/4
.281	49-2205	49-2205-C	1”	3”	5/16
.312	49-2255	49-2255-C	1”	3”	5/16
.343	49-2305	49-2305-C	1”	3”	3/8
.375	49-2355	49-2355-C	1”	3”	3/8
.406	49-2405	49-2405-C	1”	3”	7/16
.437	49-2455	49-2455-C	1”	3”	7/16
.468	49-2505	49-2505-C	1”	3”	1/2
.500	49-2555	49-2555-C	1”	3”	1/2

2 FLUTE 120° INCLUDED ANGLE

SIZE	2 FLUTE EDP #	ALTIN COATED EDP #	LENGTH OF CUT	OVERALL LENGTH	SHANK DIA
.125	49-2000	49-2000-C	5/8”	2”	1/8
.187	49-2050	49-2050-C	3/4”	2-1/2”	3/16
.218	49-2100	49-2100-C	3/4”	2-1/2”	1/4
.250	49-2150	49-2150-C	1”	3”	1/4
.281	49-2200	49-2200-C	1”	3”	5/16
.312	49-2250	49-2250-C	1”	3”	5/16
.343	49-2300	49-2300-C	1”	3”	3/8
.375	49-2350	49-2350-C	1”	3”	3/8
.406	49-2400	49-2400-C	1”	3”	7/16
.437	49-2450	49-2450-C	1”	3”	7/16
.468	49-2500	49-2500-C	1”	3”	1/2
.500	49-2550	49-2550-C	1”	3”	1/2

SERIES 49 DRILL-MILLS

APPLICATION : DRILL & MILL WITH ONE TOOL





30° RIGHT HAND HELIX

4 FLUTE 60° INCLUDED ANGLE

SIZE	4 FLUTE EDP #	ALTIN COATED EDP #	LENGTH OF CUT	OVERALL LENGTH	SHANK DIA
.125	49-1015	49-1015-C	5/8”	2”	1/8
.187	49-1065	49-1065-C	3/4”	2-1/2”	3/16
.218	49-1115	49-1115-C	3/4”	2-1/2”	1/4
.250	49-1165	49-1165-C	1”	3”	1/4
.281	49-1215	49-1215-C	1”	3”	5/16
.312	49-1265	49-1265-C	1”	3”	5/16
.343	49-1315	49-1315-C	1”	3”	3/8
.375	49-1365	49-1365-C	1”	3”	3/8
.406	49-1415	49-1415-C	1”	3”	7/16
.437	49-1465	49-1465-C	1”	3”	7/16
.468	49-1515	49-1515-C	1”	3”	1/2
.500	49-1565	49-1565-C	1”	3”	1/2

4 FLUTE 82° INCLUDED ANGLE

SIZE	4 FLUTE EDP #	ALTIN COATED EDP #	LENGTH OF CUT	OVERALL LENGTH	SHANK DIA
.125	49-1010	49-1010-C	5/8”	2”	1/8
.187	49-1060	49-1060-C	3/4”	2-1/2”	3/16
.218	49-1110	49-1110-C	3/4”	2-1/2”	1/4
.250	49-1160	49-1160-C	1”	3”	1/4
.281	49-1210	49-1210-C	1”	3”	5/16
.312	49-1260	49-1260-C	1”	3”	5/16
.343	49-1310	49-1310-C	1”	3”	3/8
.375	49-1360	49-1360-C	1”	3”	3/8
.406	49-1410	49-1410-C	1”	3”	7/16
.437	49-1460	49-1460-C	1”	3”	7/16
.468	49-1510	49-1510-C	1”	3”	1/2
.500	49-1560	49-1560-C	1”	3”	1/2

4 FLUTE 90° INCLUDED ANGLE

SIZE	4 FLUTE EDP #	ALTIN COATED EDP #	LENGTH OF CUT	OVERALL LENGTH	SHANK DIA
.125	49-1005	49-1005-C	5/8”	2”	1/8
.187	49-1055	49-1055-C	3/4”	2-1/2”	3/16
.218	49-1105	49-1105-C	3/4”	2-1/2”	1/4
.250	49-1155	49-1155-C	1”	3”	1/4
.281	49-1205	49-1205-C	1”	3”	5/16
.312	49-1255	49-1255-C	1”	3”	5/16
.343	49-1305	49-1305-C	1”	3”	3/8
.375	49-1355	49-1355-C	1”	3”	3/8
.406	49-1405	49-1405-C	1”	3”	7/16
.437	49-1455	49-1455-C	1”	3”	7/16
.468	49-1505	49-1505-C	1”	3”	1/2
.500	49-1555	49-1555-C	1”	3”	1/2

4 FLUTE 120° INCLUDED ANGLE

SIZE	4 FLUTE EDP #	ALTIN COATED EDP #	LENGTH OF CUT	OVERALL LENGTH	SHANK DIA
.125	49-1000	49-1000-C	5/8”	2”	1/8
.187	49-1050	49-1050-C	3/4”	2-1/2”	3/16
.218	49-1100	49-1100-C	3/4”	2-1/2”	1/4
.250	49-1150	49-1150-C	1”	3”	1/4
.281	49-1200	49-1200-C	1”	3”	5/16
.312	49-1250	49-1250-C	1”	3”	5/16
.343	49-1300	49-1300-C	1”	3”	3/8
.375	49-1350	49-1350-C	1”	3”	3/8
.406	49-1400	49-1400-C	1”	3”	7/16
.437	49-1450	49-1450-C	1”	3”	7/16
.468	49-1500	49-1500-C	1”	3”	1/2
.500	49-1550	49-1550-C	1”	3”	1/2

NEED A SPECIAL DRILL-MILL? TURN TO PAGE 55 AND LET US KNOW WHAT YOU NEED

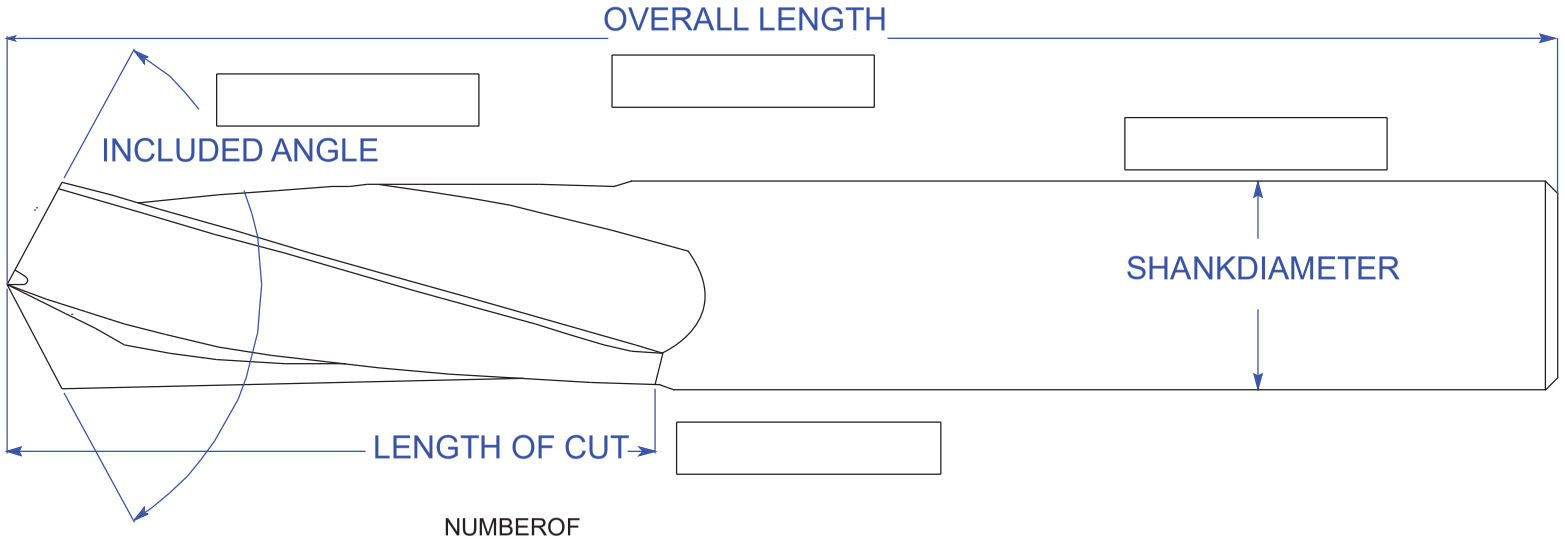
SPECIAL DRILL MILLS

FILL IN THE BLANK SPECIAL DRILL MILLS

MAKE YOUR OWN DRILL MILL TOOL HERE

SERIES 49 DRILLMILLS

Simply make a copy
fill in the information below and email to us.
we will quote as soon as possible. INFO@generalcuttingtools.com
Any dimension you're not sure of leave blank, we will quote standard
fill in sheet is also available at generalcuttingtools.com



NUMBEROF FLUTES _____

NOTES

QUOTE IN QUANTITIES OF _____ _____ _____

COMPANY NAME

YOUR NAME

PHONE #

EMAIL

YOUR DISTRIBUTOR

INTERNAL TOOL

DRAWN BY:

DATE

TOLERANCE

.X +/- .015
.XX +/- .005
.XXX +/- .002

TOOL NUMBER:

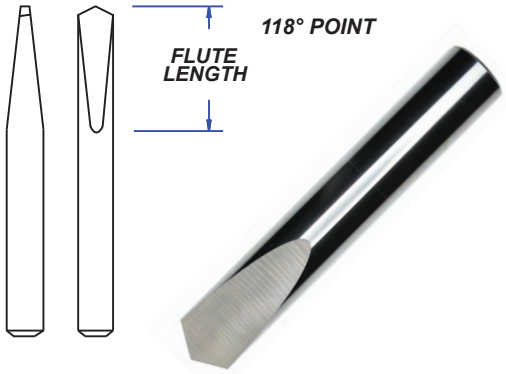
TYPE OF MATERIAL TO BE CUT

SPADE, CENTER & SPOTTING DRILLS

SERIES 58 SPADE DRILLS

APPLICATION : FOR DRILLING SHALLOW DEPTH HOLES IN HARD MATERIALS

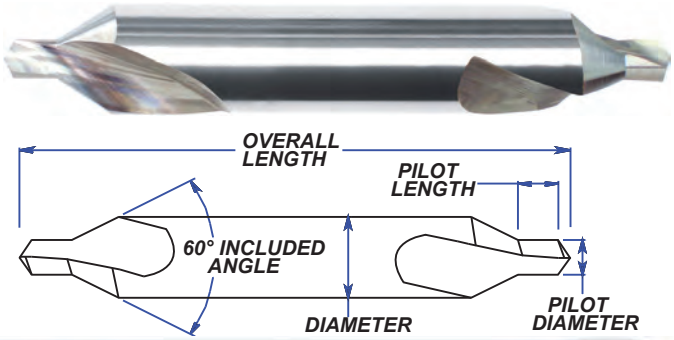
DRILL DIA	FLUTE LENGTH	SHANK DIA	ORDER EDP #	TOOL ID #	OVERALL LENGTH
.125 (1/8)	1/2	.125	58-1108	SD-125	2”
.156 (5/32)	9/16	.187	58-1110	SD-156	2”
.187 (3/16)	11/16	.187	58-1112	SD-187	2”
.218 (7/32)	11/16	.250	58-1114	SD-218	2”
.250 (1/4)	13/16	.250	58-1116	SD-250	2”
.281 (9/32)	7/8	.312	58-1118	SD-281	2-1/2”
.312 (5/16)	7/8	.312	58-1120	SD-312	2-1/2”
.343 (11/32)	15/16	.375	58-1122	SD-343	2-1/2”
.375 (3/8)	1-1/8	.375	58-1124	SD-375	2-1/2”
.406 (13/32)	1-1/8	.437	58-1126	SD-406	3”
.437 (7/16)	1-1/8	.437	58-1128	SD-437	3”
.468 (15/32)	1-3/16	.500	58-1130	SD-468	3”
.500 (1/2)	1-3/16	.500	58-1132	SD-500	3”



SERIES 71 CARBIDE CENTER DRILLS

APPLICATION : DRILLING CENTERS IN JUST ABOUT ANY MATERIAL

SIZE	DIA	PILOT DIA	PILOT LENGTH	OVERALL LENGTH	ORDER EDP #
#0	1/8	1/32 (.031)	1/32 (.031)	2”	71-1005
#1	1/8	3/64 (.046)	3/64 (.046)	2”	71-1010
#2	3/16	5/64 (.078)	5/64 (.078)	2-1/2”	71-1015
#3	1/4	7/64 (.109)	7/64 (.109)	2-1/2”	71-1020
#4	5/16	1/8 (.125)	1/8 (.125)	2-1/2”	71-1025
#5	7/16	3/16 (.187)	3/16 (.187)	3”	71-1030
#6	1/2	7/32 (.218)	7/32 (.218)	3”	71-1035



SERIES 75 SPOTTING DRILLS

APPLICATION : CNC SPOT DRILLING FASTER THAN CENTER DRILLING CAN BE USED AS A COUNTERINK



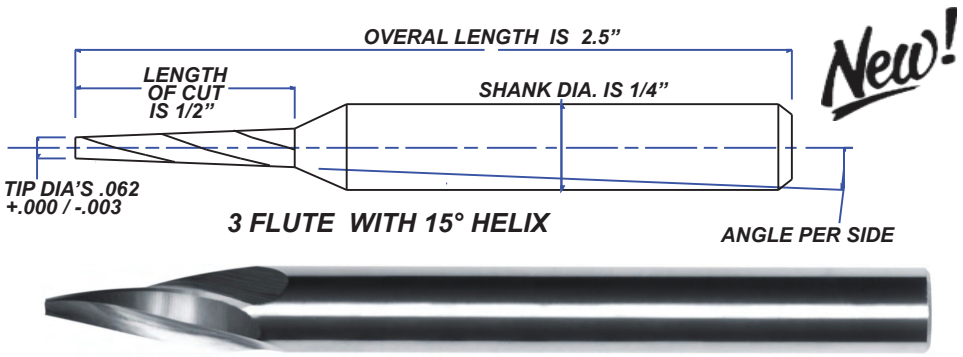
90° INCLUDED ANGLE				
SIZE	ORDER EDP #	TOOL ID #	SHANK DIA	OVERALL LENGTH
.125	75-2000	SPD-125-90	1/8	2”
.187	75-2005	SPD-187-90	3/16	2”
.250	75-2010	SPD-250-90	1/4	2”
.312	75-2015	SPD-312-90	5/16	2”
.375	75-2020	SPD-375-90	3/8	2”
.500	75-2025	SPD-500-90	1/2	2-1/2”
120° INCLUDED ANGLE				
SIZE	ORDER EDP #	TOOL ID #	SHANK DIA	OVERALL LENGTH
.125	75-3000	SPD-125-120	1/8	2”
.187	75-3005	SPD-187-120	3/16	2”
.250	75-3010	SPD-250-120	1/4	2”
.312	75-3015	SPD-312-120	5/16	2”
.375	75-3020	SPD-375-120	3/8	2”
.500	75-3025	SPD-500-120	1/2	2-1/2”

82° INCLUDED ANGLE FOR FLAT HEAD SCREWS					
SIZE	ORDER EDP #	TOOL ID #	SCREW SIZE	SHANK DIA	OVERALL LENGTH
.250	75-1000	SPD-250-82	UP TO #2 SCREW	1/4	2”
.312	75-1005	SPD-312-82	UP TO #6 SCREW	5/16	2”
.375	75-1010	SPD-375-82	UP TO #8 SCREW	3/8	2”
.500	75-1015	SPD-500-82	UP TO #10 SCREW	1/2	2-1/2”
.562	75-1020	SPD-562-82	UP TO 1/4 SCREW	1/2	2-1/2”
.687	75-1025	SPD-687-82	UP TO 5/16 SCREW	1/2	2-1/2”
.812	75-1030	SPD-812-82	UP TO 3/8 SCREW	1/2	2-1/2”
.937	75-1035	SPD-937-82	UP TO 1/2 SCREW	1/2	2-1/2”

SERIES 69 SMALL CARBIDE STUB TAPERS

APPLICATION : FOR MILLING TAPERS OR TAPERED REAMING

ANGLE PER SIDE	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #
1°	69-1000	69-1000-C	ST-1
2°	69-1020	69-1020-C	ST-2
3°	69-1030	69-1030-C	ST-3
4°	69-1040	69-1040-C	ST-4
5°	69-1050	69-1050-C	ST-5
6°	69-1060	69-1060-C	ST-6
7°	69-1070	69-1070-C	ST-7
8°	69-1080	69-1080-C	ST-8
9°	69-1090	69-1090-C	ST-9
10°	69-1100	69-1100-C	ST-10
11°	69-1105	69-1105-C	ST-11

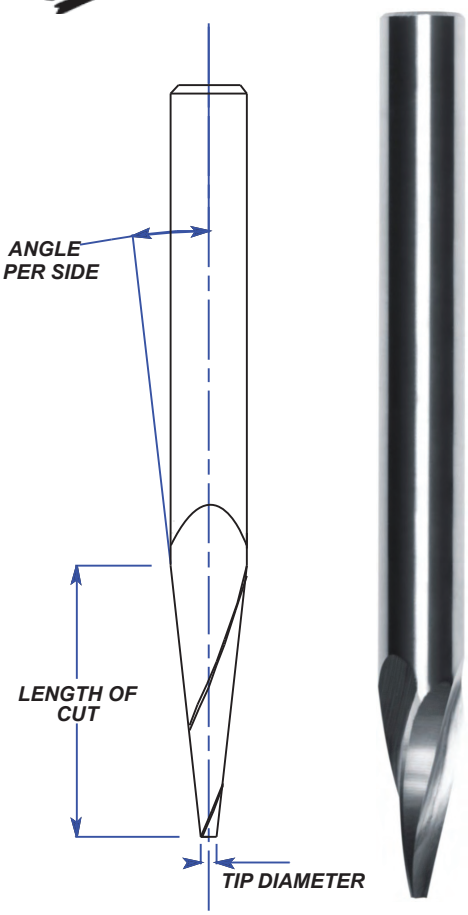


SERIES 69 STANDARD TAPERED ENDMILLS

APPLICATION : FOR MILLING TAPERS OR TAPERED REAMING

ANGLE PER SIDE	TIP DIA	LENGTH OF CUT	SHANK AND O.A.L.	ORDER EDP #	ALTIN COATED EDP #
1°	.094	.750	1/4 x 2.5	69-2000	69-2000-C
	.125	1.000	1/4 x 3.0	69-2020	69-2020-C
	.250	1.250	3/8 x 3.5	69-2030	69-2030-C
1-1/2°	.094	.750	1/4 x 2.5	69-2040	69-2040-C
	.125	1.000	1/4 x 3.0	69-2050	69-2050-C
	.250	1.250	3/8 x 3.5	69-2060	69-2060-C
2°	.094	.750	1/4 x 2.5	69-2070	69-2070-C
	.125	1.000	1/4 x 3.0	69-2080	69-2080-C
	.250	1.250	3/8 x 3.5	69-2090	69-2090-C
3°	.094	1.000	1/4 x 3.0	69-3000	69-3000-C
	.125	1.000	1/4 x 3.0	69-3010	69-3010-C
	.250	1.190	3/8 x 3.5	69-3020	69-3020-C
4°	.094	1.000	1/4 x 3.0	69-3030	69-3030-C
	.125	1.000	3/8 x 3.0	69-3040	69-3040-C
	.250	1.250	1/2 x 3.5	69-3050	69-3050-C
5°	.094	.750	1/4 x 3.0	69-3060	69-3060-C
	.125	1.250	3/8 x 3.5	69-3070	69-3070-C
	.250	1.250	1/2 x 3.5	69-3080	69-3080-C
7°	.094	.500	1/4 x 3.0	69-3090	69-3090-C
	.125	1.000	3/8 x 3.0	69-4000	69-4000-C
	.250	1.000	1/2 x 3.5	69-4010	69-4010-C
10°	.094	.750	3/8 x 2.5	69-4020	69-4020-C
	.125	1.000	1/2 x 3.5	69-4030	69-4030-C
	.250	1.250	3/4 x 4.0	69-4040	69-4040-C
15°	.094	.250	1/4 x 2.5	69-4050	69-4050-C
	.125	.460	3/8 x 2.5	69-4060	69-4060-C
	.250	.460	1/2 x 3.5	69-4070	69-4070-C
30°	.094	.280	3/8 x 2.5	69-4080	69-4080-C
	.125	.325	1/2 x 3.0	69-4090	69-4090-C
	.250	.430	3/4 x 4.0	69-5000	69-5000-C
45°	.125	.313	3/4 x 4.0	69-5010	69-5010-C

New! **3 FLUTE WITH 15° HELIX**



ENDMILLS

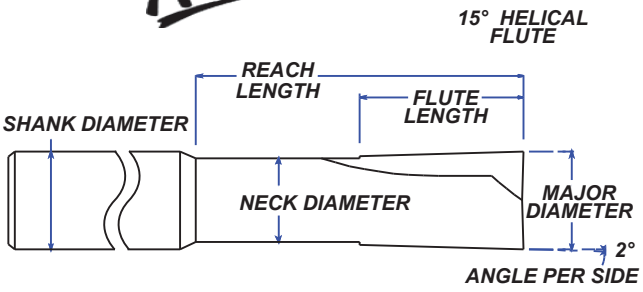
SERIES 45 BACK-DRAFT ENDMILLS

APPLICATION : REVERSE TAPERED ENDMILLS



4 FLUTE WITH 15° HELIX

New!



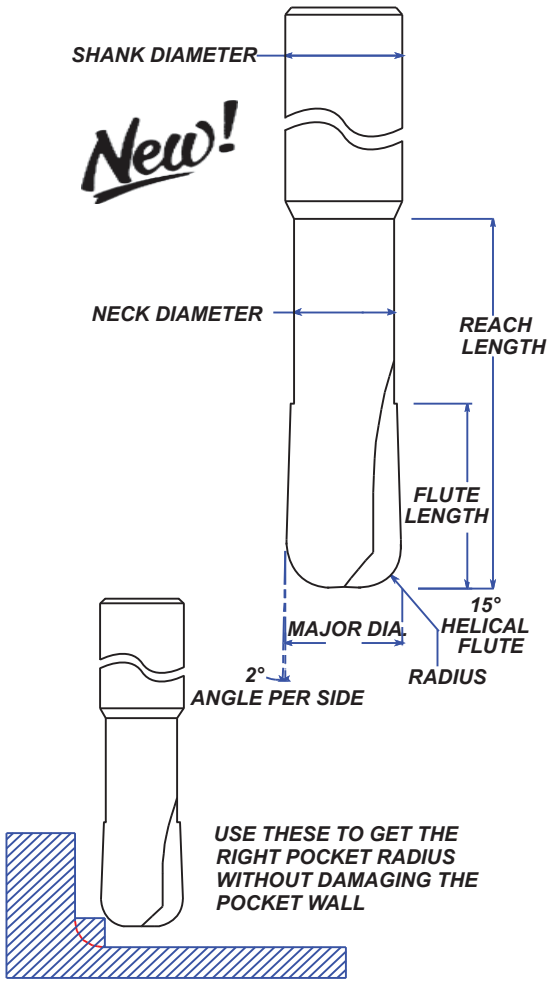
MAJOR DIA	FLUTE LENGTH	NECK DIA	REACH LENGTH	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	O.A.L.
3/16	1/4	.156	1/2	45-1100	45-1100-C	3/16	2-1/2”
			3/4	45-1105	45-1105-C		
			1”	45-1110	45-1110-C		
1/4	3/8	.210	5/8	45-1115	45-1115-C	1/4	2-1/2”
			3/4	45-1120	45-1120-C		
			1”	45-1125	45-1125-C		
3/8	1/2	.320	5/8	45-1130	45-1130-C	3/8	2-1/2”
			3/4	45-1135	45-1135-C		
			1”	45-1140	45-1140-C		
1/2	5/8	.425	5/8	45-1145	45-1145-C	1/2	3”
			3/4	45-1150	45-1150-C		
			1”	45-1155	45-1155-C		

SERIES 45 BACK-DRAFT RADIUS ENDMILLS

APPLICATION : REVERSE TAPERED ENDMILLS WITH A CORNER RADIUS

4 FLUTE WITH 15° HELIX

New!



MAJOR DIA	FLUTE LENGTH	NECK DIA	RADIUS SIZE	REACH LENGTH	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	O.A.L.
3/16	1/4	.156	1/32	1/2	45-3100	45-3100-C	3/16	2-1/2”
			1/32	3/4	45-3105	45-3105-C		
			1/32	1”	45-3110	45-3110-C		
			1/16	1/2	45-3115	45-3115-C		
			1/16	3/4	45-3120	45-3120-C		
			1/16	1”	45-3125	45-3125-C		
1/4	3/8	.210	1/32	5/8	45-3130	45-3130-C	1/4	2-1/2”
			1/32	3/4	45-3135	45-3135-C		
			1/32	1”	45-3140	45-3140-C		
			1/16	5/8	45-3145	45-3145-C		
			1/16	3/4	45-3150	45-3150-C		
			1/16	1”	45-3155	45-3155-C		
3/8	1/2	.320	1/32	3/4	45-3160	45-3160-C	3/8	2-1/2”
			1/32	1”	45-3165	45-3165-C		
			1/32	1-1/4	45-3170	45-3170-C		
			1/16	3/4	45-3175	45-3175-C		
			1/16	1”	45-3180	45-3180-C		
			1/16	1-1/4	45-3185	45-3185-C		
			3/32	3/4	45-3190	45-3190-C		
			3/32	1”	45-3195	45-3195-C		
			3/32	1-1/4	45-3200	45-3200-C		
1/2	5/8	.425	1/32	3/4	45-3205	45-3205-C	1/2	3”
			1/32	1”	45-3210	45-3210-C		
			1/32	1-1/4	45-3215	45-3215-C		
			1/16	3/4	45-3220	45-3220-C		
			1/16	1”	45-3225	45-3225-C		
			1/16	1-1/4	45-3230	45-3230-C		
			3/32	3/4	45-3235	45-3235-C		
			3/32	1”	45-3240	45-3240-C		
			3/32	1-1/4	45-3245	45-3245-C		
			1/8	3/4	45-3250	45-3250-C		
			1/8	1”	45-3255	45-3255-C		
			1/8	1-1/4	45-3260	45-3260-C		



APPLICATION : SMALLER ENDMILLS USED IN TRACER, FACE, PROFILE MILLING AND PLUNGING

SERIES 21 TWO FLUTE
SERIES 41 FOUR FLUTE

1/8" SHANK
1-1/2" OAL

CENTER CUTTING
30° RIGHT HAND HELIX, RIGHT HAND CUT



L.O.C. +.015/-.000
DIA +.0005/-.000

2 & 4 FLUTE SQUARE			
SIZE	LENGTH OF CUT	2 FLUTE EDP #	4 FLUTE EDP #
.005	.015	21-7000	41-7000
.006	.018	21-7005	41-7005
.007	.021	21-7010	41-7010
.008	.024	21-7015	41-7015
.009	.027	21-7020	41-7020
.010	.030	21-7025	41-7025
.011	.033	21-7030	41-7030
.012	.036	21-7035	41-7035
.013	.039	21-7040	41-7040
.014	.042	21-7045	41-7045
.015	.045	21-7050	41-7050
.016	.048	21-7055	41-7055
.017	.051	21-7060	41-7060
.018	.054	21-7065	41-7065
.019	.057	21-7070	41-7070
.020	.060	21-7075	41-7075
.021	.063	21-7080	41-7080
.022	.066	21-7085	41-7085
.023	.069	21-7090	41-7090
.024	.072	21-7095	41-7095
.025	.075	21-7100	41-7100
.026	.078	21-7105	41-7105
.027	.081	21-7110	41-7110
.028	.084	21-7115	41-7115
.029	.087	21-7120	41-7120
.030	.090	21-7125	41-7125
.031	.093	21-7130	41-7130
.035	.105	21-7135	41-7135
.040	.120	21-7140	41-7140
.045	.135	21-7145	41-7145
.047	.141	21-7150	41-7150
.050	.150	21-7155	41-7155
.055	.165	21-7160	41-7160
.060	.180	21-7165	41-7165
.065	.195	21-7170	41-7170
.070	.210	21-7175	41-7175
.075	.225	21-7180	41-7180
.080	.240	21-7185	41-7185
.085	.255	21-7190	41-7190
.090	.270	21-7195	41-7195
.100	.300	21-7200	41-7200
.105	.315	21-7205	41-7205
.110	.330	21-7210	41-7210
.115	.345	21-7215	41-7215
.120	.360	21-7220	41-7220
.125	.375	21-7225	41-7225

2 & 4 FLUTE BALL			
SIZE	LENGTH OF CUT	2 FLUTE EDP #	4 FLUTE EDP #
.010	.030	21-6000	-- --
.015	.045	21-6005	-- --
.020	.060	21-6010	41-6010
.025	.075	21-6015	41-6015
.030	.090	21-6020	41-6020
.031	.093	21-6025	41-6025
.035	.105	21-6030	41-6030
.040	.120	21-6035	41-6035
.045	.135	21-6040	41-6040
.047	.141	21-6045	41-6045
.050	.150	21-6050	41-6050
.055	.165	21-6055	41-6055
.060	.180	21-6060	41-6060
.065	.195	21-6065	41-6065
.070	.210	21-6070	41-6070
.075	.225	21-6075	41-6075
.080	.240	21-6080	41-6080
.085	.255	21-6085	41-6085
.090	.270	21-6090	41-6090
.095	.285	21-6095	41-6065
.100	.300	21-6100	41-6100
.120	.360	21-6105	41-6105

ENDMILLS

SERIES 41 CARBIDE ENDMILLS

APPLICATION : FACE, PROFILING, MILLING, AND PLUNGING

SIZE +.000/-.002	ORDER EDP #	ALTIN COATED EDP #	LENGTH OF CUT	O.A.L.	SHANK DIA
1/16 .062	41-0621	41-0621-C	.200	1-1/2”	1/8
5/64 .078	41-0781	41-0781-C	.280	1-1/2”	1/8
3/32 .094	41-0941	41-0941-C	.190	1-1/2”	1/8
	41-0942	41-0942-C	.380	1-1/2”	1/8
	41-0943	41-0943-C	.500	2”	1/8
	41-0944	41-0944-C	.750	2-1/2”	1/8
2.5mm .098	41-0981	41-0981-C	.250	2”	1/8
7/64 .109	41-1091	41-1091-C	.250	2”	1/8
	41-1092	41-1092-C	.500	2”	1/8
3mm .118	41-1181	41-1181-C	.400	2”	1/8
1/8 .125	41-1251	41-1251-C	.250	2”	1/8
	41-1252	41-1252-C	.380	2”	1/8
	41-1253	41-1253-C	.500	2”	1/8
	41-1254	41-1254-C	.750	2-1/2”	1/8
	41-1255	41-1255-C	1.000	3”	1/8
9/64 .141	41-1411	41-1411-C	.380	2”	3/16
	41-1412	41-1412-C	.750	2-1/2”	3/16
5/32 .156	41-1561	41-1561-C	.380	2”	3/16
	41-1562	41-1562-C	.650	2-1/2”	3/16
4mm .158	41-1581	41-1581-C	.380	2”	3/16
11/64 .172	41-1721	41-1721-C	.380	2”	3/16
	41-1722	41-1722-C	.650	2-1/2”	3/16
3/16 .187	41-1871	41-1871-C	.380	2”	3/16
	41-1872	41-1872-C	.650	2”	3/16
	41-1873	41-1873-C	.750	2-1/2”	3/16
	41-1874	41-1874-C	1.000	2-1/2”	3/16
	41-1875	41-1875-C	1.300	3”	3/16
5mm .197	41-1971	41-1971-C	.500	2”	1/4
13/64 .203	41-2031	41-2031-C	.400	2”	1/4
	41-2032	41-2032-C	.800	2-1/2”	1/4
7/32 .218	41-2181	41-2181-C	.400	2”	1/4
	41-2182	41-2182-C	.800	2-1/2”	1/4
15/64 .234	41-2341	41-2341-C	.400	2”	1/4
	41-2342	41-2342-C	.800	2-1/2”	1/4
6mm .236	41-2361	41-2361-C	.500	2”	1/4
1/4 .250	41-2501	41-2501-C	.500	2”	1/4
	41-2502	41-2502-C	.800	2-1/2”	1/4
	41-2503	41-2503-C	1.000	3”	1/4
	41-2504	41-2504-C	1.300	3”	1/4
	41-2505	41-2505-C	1.500	4”	1/4
	41-2506	41-2506-C	1.800	4”	1/4
17/64 .266	41-2661	41-2661-C	.500	2”	5/16
	41-2662	41-2662-C	1.000	2-1/2”	5/16
7mm .276	41-2761	41-2761-C	.650	2-1/2”	5/16
9/32 .281	41-2811	41-2811-C	.500	2”	5/16
	41-2812	41-2812-C	.800	2-1/2”	5/16
19/64 .297	41-2971	41-2971-C	.500	2”	5/16
	41-2972	41-2972-C	.800	2-1/2”	5/16
5/16 .312	41-3121	41-3121-C	.500	2”	5/16
	41-3122	41-3122-C	.750	2-1/2”	5/16
	41-3123	41-3123-C	1.000	3”	5/16
	41-3124	41-3124-C	1.250	3”	5/16
	41-3125	41-3125-C	1.500	4”	5/16
	41-3126	41-3126-C	1.800	4”	5/16

CENTER CUTTING
30° RIGHT HAND HELIX, RIGHT HAND CUT

A GREAT QUALITY CARBIDE ENDMILL



SEE OUR HIGH PERFORMANCE ENDMILLS ON PG-110-111

SIZE +.000/-.002	ORDER EDP #	ALTIN COATED EDP #	LENGTH OF CUT	O.A.L.	SHANK DIA
8mm .315	41-3151	41-3151-C	.500	2”	3/8
	41-3152	41-3152-C	.750	2-1/2”	3/8
21/64 .328	41-3281	41-3281-C	.500	2”	3/8
	41-3282	41-3282-C	.750	2-1/2”	3/8
11/32 .344	41-3441	41-3441-C	.500	2”	3/8
	41-3442	41-3442-C	.750	2-/12”	3/8
9mm .354	41-3541	41-3541-C	.500	2”	3/8
23/64 .359	41-3591	41-3591-C	.500	2”	3/8
	41-3592	41-3592-C	.750	2-1/2”	3/8
3/8 .375	41-3751	41-3751-C	.500	2”	3/8
	41-3752	41-3752-C	.750	2-1/2”	3/8
	41-3753	41-3753-C	1.000	3”	3/8
	41-3754	41-3754-C	1.250	3”	3/8
	41-3755	41-3755-C	1.500	4”	3/8
	41-3756	41-3756-C	1.750	4”	3/8
	41-3757	41-3737-C	2.000	4”	3/8
25/64 .391	41-3911	41-3911-C	.750	2-1/2”	7/16
	41-3912	41-3912-C	1.000	3”	7/16
10mm .394	41-3941	41-3941-C	.750	2-1/2”	7/16
	41-3942	41-3942-C	1.000	3”	7/16
13/32 .406	41-4061	41-4061-C	.750	2-1/2”	7/16
	41-4062	41-4062-C	1.000	3”	7/16
27/64 .422	41-4221	41-4221-C	.750	2-1/2”	7/16
	41-4222	41-4222-C	1.000	3”	7/16
11mm .433	41-4331	41-4331-C	.750	2-1/2”	7/16
7/16 .437	41-4371	41-4371-C	.750	2-1/2”	7/16
	41-4372	41-4372-C	1.000	3”	7/16
	41-4373	41-4373-C	1.800	4”	7/16
29/64 .453	41-4531	41-4531-C	.750	2-1/2”	1/2
	41-4532	41-4532-C	1.250	3”	1/2
15/32 .469	41-4691	41-4691-C	.750	2-1/2”	1/2
	41-4692	41-4692-C	1.250	3”	1/2
12mm .472	41-4721	41-4721-C	.750	2-1/2”	1/2
	41-4722	41-4722-C	1.250	3”	1/2
31/64 .484	41-4841	41-4841-C	.750	2-1/2”	1/2
	41-4842	41-4842-C	1.250	3”	1/2
1/2 .500	41-5001	41-5001-C	.750	2-1/2”	1/2
	41-5002	41-5002-C	1.000	3”	1/2
	41-5003	41-5003-C	1.250	3”	1/2
	41-5004	41-5004-C	1.500	4”	1/2
	41-5005	41-5005-C	1.750	4”	1/2
	41-5006	41-5006-C	2.000	4”	1/2
	41-5007	41-5007-C	3.000	6”	1/2
	41-5008	41-5008-C	4.000	6”	1/2

APPLICATION: FOR CUTTING LARGE RADIUS PARTS WITH A MORE COST EFFICIENT TOOL DESIGN

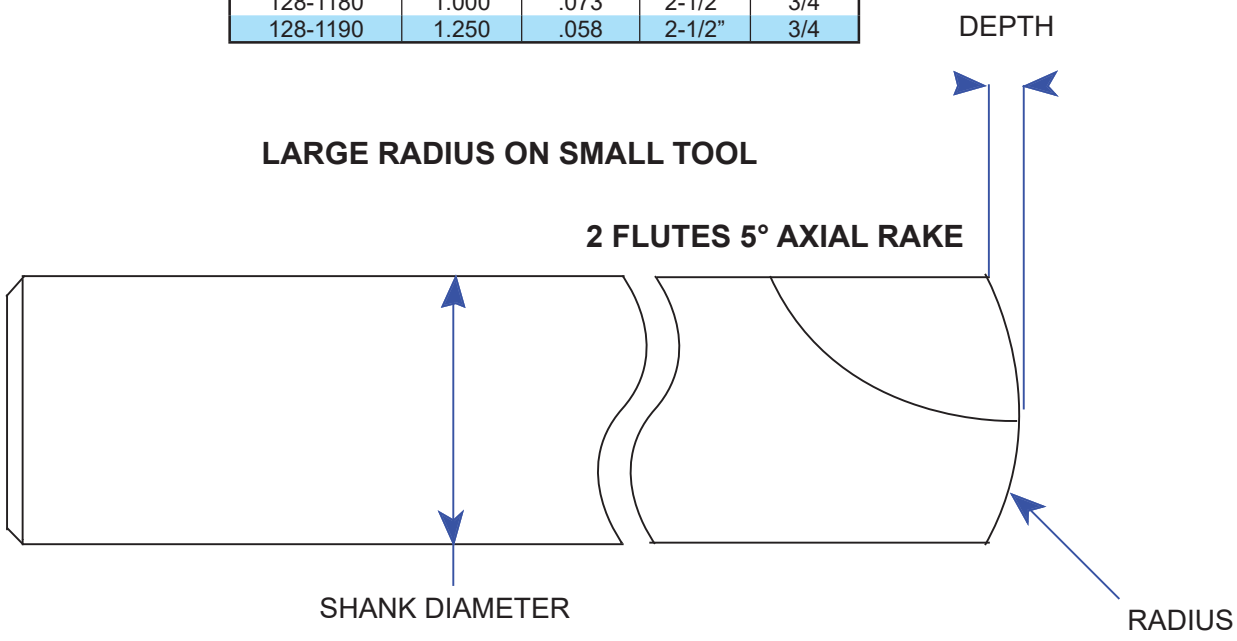
SOLID CARBIDE

New!

ORDER EDP #	RADIUS	DEPTH	O.A.L.	SHANK DIA
128-1000	.250	.033	2”	1/4
128-1010	.375	.021	2”	1/4
128-1020	.500	.016	2”	1/4
128-1030	.625	.013	2”	1/4
128-1040	.375	.050	2”	3/8
128-1050	.500	.036	2”	3/8
128-1060	.625	.029	2”	3/8
128-1070	.750	.024	2”	3/8
128-1080	.500	.067	2-1/2”	1/2
128-1090	.625	.052	2-1/2”	1/2
128-1100	.750	.043	2-1/2”	1/2
128-1110	.875	.036	2-1/2”	1/2
128-1120	.625	.084	2-1/2”	5/8
128-1130	.750	.068	2-1/2”	5/8
128-1140	.875	.058	2-1/2”	5/8
128-1150	1.000	.050	2-1/2”	5/8
128-1160	.750	.100	2-1/2”	3/4
128-1170	.875	.084	2-1/2”	3/4
128-1180	1.000	.073	2-1/2”	3/4
128-1190	1.250	.058	2-1/2”	3/4

LARGE RADIUS ON SMALL TOOL

2 FLUTES 5° AXIAL RAKE



ENGRAVING TOOLS

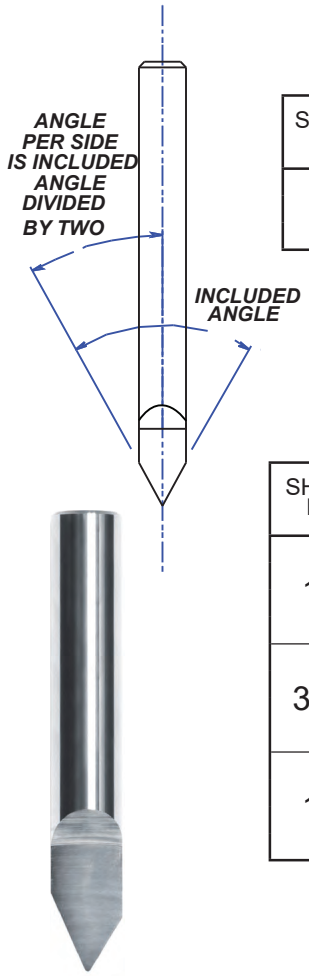
SERIES 62 ENGRAVING TOOLS

APPLICATION : WE CALL THEM ENGRAVING TOOLS, BUT THEY ARE ALSO USED FOR CHAMFERING, COUNTER SINKING, ETC.

ENGRAVING TOOLS

STANDARD POINT
TIP DIA APPROX .015
FASTER FREE CUTTING

SHANK DIA	TIP INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/8	30°	62-1095	62-1095-C	2”
	40°	62-1100	62-1100-C	
	60°	62-1105	62-1105-C	
	90°	62-1110	62-1110-C	
	120°	62-1115	62-1115-C	
3/16	30°	62-1117	62-1117-C	2-1/2”
	40°	62-1120	62-1120-C	
	60°	62-1125	62-1125-C	
	90°	62-1130	62-1130-C	
	120°	62-1135	62-1135-C	
1/4	30°	62-1137	62-1137-C	2-1/2”
	40°	62-1140	62-1140-C	
	60°	62-1145	62-1145-C	
	90°	62-1150	62-1150-C	
	120°	62-1155	62-1155-C	
5/16	30°	62-1157	62-1157-C	2-1/2”
	40°	62-1160	62-1160-C	
	60°	62-1162	62-1162-C	
	90°	62-1165	62-1165-C	
	120°	62-1167	62-1167-C	
3/8	30°	62-1170	62-1170-C	2-1/2”
	40°	62-1172	62-1172-C	
	60°	62-1175	62-1175-C	
	90°	62-1177	62-1177-C	
	120°	62-1180	62-1180-C	
1/2	30°	62-1182	62-1182-C	3”
	40°	62-1185	62-1185-C	
	60°	62-1187	62-1187-C	
	90°	62-1190	62-1190-C	
	120°	62-1192	62-1192-C	



FINE POINT

TIP DIA APPROX .002
SLOWER CUTTING
FOR VERY FINE CUTS

SHANK DIA	TIP INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/8	40°	62-1200	62-1200	2”
	60°	62-1205	62-1205	
	90°	62-1210	62-1210	

EXTRA LONG

STANDARD PONT
TIP DIA APROX .015
FASTER FREE CUTTING

SHANK DIA	TIP INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/8	40°	62-1800	62-1800-C	4”
	60°	62-1805	62-1805-C	
	90°	62-1810	62-1810-C	
	120°	62-1815	62-1815-C	
3/16	40°	62-1820	62-1820-C	4”
	60°	62-1825	62-1825-C	
	90°	62-1830	62-1830-C	
	120°	62-1835	62-1835-C	
1/4	40°	62-1840	62-1840-C	6”
	60°	62-1845	62-1845-C	
	90°	62-1850	62-1850-C	
	120°	62-1855	62-1855-C	

SOFT MATERIAL

TIP DIA APPROX .015
GROUND WITH INCREASED CLEARANCE FOR CUTTING ALUM, BRASS, PLASTIC ECT.

SHANK DIA	TIP INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/8	40°	62-1500	62-1500-C	2”
	60°	62-1505	62-1505-C	
	90°	62-1510	62-1510-C	
3/16	40°	62-1520	62-1520-C	2-1/2”
	60°	62-1525	62-1525-C	
	90°	62-1530	62-1530-C	
1/4	40°	62-1540	62-1540-C	2-1/2”
	60°	62-1545	62-1545-C	
	90°	62-1550	62-1550-C	

DOUBLE END

STANDARD POINT DOUBLE TOOL LIFE
TIP DIA APROX .015 FASTER FREE CUTTING



SHANK DIA	TIP INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/8	30°	62-1400	62-1400-C	2”
	40°	62-1402	62-1402-C	
	60°	62-1405	62-1405-C	
	90°	62-1410	62-1410-C	
	120°	62-1415	62-1415-C	
3/16	30°	62-1417	62-1417-C	2-1/2”
	40°	62-1420	62-1420-C	
	60°	62-1425	62-1425-C	
	90°	62-1430	62-1430-C	
	120°	62-1435	62-1435-C	
1/4	30°	62-1437	62-1437-C	2-1/2”
	40°	62-1440	62-1440-C	
	60°	62-1445	62-1445-C	
	90°	62-1450	62-1450-C	
	120°	62-1455	62-1455-C	

ITI CARBIDE: FOR THE HIGHEST PRODUCTION

ITI Carbide Cutting Tools

APPLICATION : FOR ENGRAVING ALL TYPES OF MATERIALS



New! SPIRAL FLUTE

SHANK DIA	TIP INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/8	40°	62-1600	62-1600-C	2”
	60°	62-1605	62-1605-C	
	90°	62-1610	62-1610-C	
3/16	40°	62-1615	62-1615-C	2.5”
	60°	62-1620	62-1620-C	
	90°	62-1625	62-1625-C	
1/4	40°	62-1630	62-1630-C	2.5”
	60°	62-1635	62-1635-C	
	90°	62-1640	62-1640-C	

CHISEL STYLE New!



SHANK DIA	TIP INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/8	40°	62-2400	62-2400-C	2”
	60°	62-2405	62-2405-C	
	90°	62-2410	62-2410-C	
3/16	40°	62-2415	62-2415-C	2.5”
	60°	62-2420	62-2420-C	
	90°	62-2425	62-2425-C	
1/4	40°	62-2430	62-2430-C	2.5”
	60°	62-2435	62-2435-C	
	90°	62-2440	62-2440-C	



New! RADIUS TIP

SHANK DIA	TIP INCLUDED ANGLE	TIP RADIUS	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/8	30°	.005°	62-2200	62-2200-C	2”
		.010°	62-2205	62-2205-C	
		.015°	62-2210	62-2210-C	
		.020°	62-2215	62-2215-C	
1/8	40°	.005°	62-2220	62-2220-C	2”
		.010°	62-2225	62-2225-C	
		.015°	62-2230	62-2230-C	
		.020°	62-2235	62-2235-C	
1/8	60°	.005°	62-2240	62-2240-C	2”
		.010°	62-2250	62-2250-C	
		.015°	62-2260	62-2260-C	
		.020°	62-2270	62-2270-C	
1/8	90°	.005°	62-2280	62-2280-C	2”
		.010°	62-2290	62-2290-C	
		.015°	62-2300	62-2300-C	
		.020°	62-2310	62-2310-C	

2 FLUTE New!



TIP INCLUDED ANGLE	SHANK DIA	WEB WIDTH	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
30°	1/8	.005°	62-2600	62-2600-C	2.0
	3/16	.005°	62-2605	62-2605-C	2.5
	1/4	.005°	62-2610	62-2610-C	2.5
60°	1/8	.005°	62-2615	62-2615-C	2.0
	1/8	.010°	62-2620	62-2620-C	2.0
	3/16	.005°	62-2625	62-2625-C	2.5
	1/4	.005°	62-2630	62-2630-C	2.5
90°	1/8	.005°	62-2635	62-2635-C	2.0
	1/8	.010°	62-2640	62-2640-C	2.0
	3/16	.005°	62-2650	62-2650-C	2.5
	1/4	.005°	62-2660	62-2660-C	2.5
120°	1/8	.005°	62-2670	62-2670-C	2.0
	3/16	.005°	62-2680	62-2680-C	2.5
	1/4	.005°	62-2690	62-2690-C	2.5

2 FLUTE BALL END MAX ENGRAVING TOOLS

NEW MAX ENGRAVING TOOLS

New! SINGLE END 60°

SHANK DIA	RADIUS	ALTIN COATED EDP #	O.A.L.
1/8	.015	62-8000	2”
	.030	62-8010	
	.045	62-8020	
3/16	.015	62-8030	2.5
	.030	62-8040	
	.045	62-8050	



ALTIN COATING STANDARD



DOUBLE END 60° New!

SHANK DIA	RADIUS	ALTIN COATED EDP #	O.A.L.
1/8	.015	62-8300	2”
	.030	62-8310	
	.045	62-8320	
3/16	.015	62-8330	2.5
	.030	62-8340	
	.045	62-8350	

New! SINGLE END 90°

SHANK DIA	RADIUS	ALTIN COATED EDP #	O.A.L.
1/8	.015	62-8100	2”
	.030	62-8110	
	.045	62-8120	
3/16	.015	62-8130	2.5
	.030	62-8140	
	.045	62-8150	

DOUBLE END 90° New!

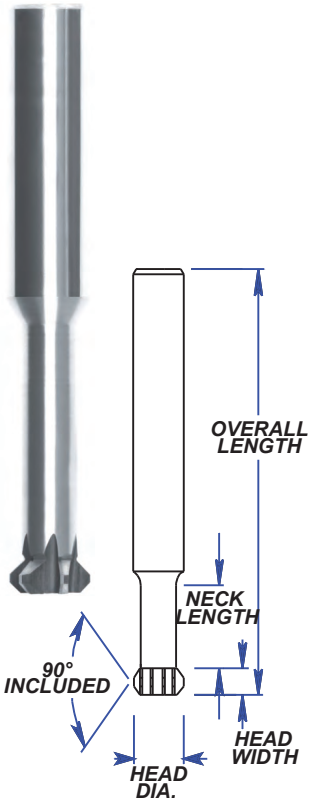
SHANK DIA	RADIUS	ALTIN COATED EDP #	O.A.L.
1/8	.015	62-8400	2”
	.030	62-8410	
	.045	62-8420	
3/16	.015	62-8430	2.5
	.030	62-8440	
	.045	62-8450	

EDGE BREAKERS

SERIES 65 EDGE BREAKERS

APPLICATION : FOR EDGE BREAKING / CHAMFERING

HEAD DIA	HEAD WIDTH	NECK DIAMETER	CHAMFER SIZE	NECK LENGTH	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA.	OVERALL LENGTH
.075	.040	.050	.012	.187	65-1180	65-1180-C	1/8	2”
				.375	65-1185	65-1185-C		
.090	.045	.060	.015	.187	65-1190	65-1190-C	1/8	2”
				.375	65-1195	65-1195-C		
				.500	65-1197	65-1197-C		
.120	.072	.075	.020	.250	65-1200	65-1200-C	1/8	2”
				.500	65-1205	65-1205-C		
.180	.093	.100	.032	.250	65-1210	65-1210-C	3/16	2-1/2”
				.500	65-1215	65-1215-C		
				.750	65-1220	65-1220-C		
				1.000	65-1225	65-1225-C		
.240	.093	.165	.032	.250	65-1230	65-1230-C	1/4	2-1/2”
				.500	65-1235	65-1235-C		
				.750	65-1240	65-1240-C		
				1.000	65-1245	65-1245-C		
.310	.093	.200	.032	.250	65-1250	65-1250-C	5/16	2-1/2”
				.500	65-1255	65-1255-C		
				.750	65-1260	65-1260-C		
				1.000	65-1265	65-1265-C		
.360	.125	.250	.046	.250	65-1270	65-1270-C	3/8	2-1/2”
				.500	65-1275	65-1275-C		
				.750	65-1280	65-1280-C		
				1.000	65-1285	65-1285-C		
.490	.156	.350	.062	.500	65-1290	65-1290-C	1/2	3”
				.750	65-1295	65-1295-C		
				1.000	65-1300	65-1300-C		

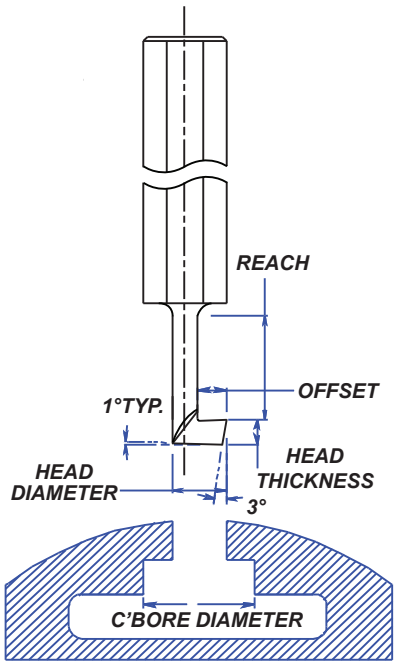


SERIES 66 CNC BACK-SPOT FACERS

APPLICATION : USED TO CREATE A C’BORE ON THE BACK SIDE OR INSIDE OF A PART USING CIRCULAR INTERPOLATION ON A CNC MILL



HEAD DIA	OFFSET	MAXIMUM C’BORE DIA	HEAD THICKNESS	REACH	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	OVERALL LENGTH
.135	.050	.235	3/32	.375	66-1100	66-1100-C	3/16	2-1/2”
				.625	66-1105	66-1105-C		
.180	.065	.310	3/32	.375	66-1110	66-1110-C	1/4	2-1/2”
				.625	66-1115	66-1115-C		
.225	.085	.395	1/8	.500	66-1120	66-1120-C	5/16	2-1/2”
				.750	66-1125	66-1125-C		
.270	.100	.470	1/8	.500	66-1130	66-1130-C	3/8	2-1/2”
				.750	66-1135	66-1135-C		
.370	.130	.630	1/8	.500	66-1140	66-1140-C	1/2	3”
				.750	66-1145	66-1145-C		
				1.000	66-1150	66-1150-C		
.435	.190	.815	5/32	.500	66-1155	66-1155-C	5/8	3-1/2”
				.750	66-1160	66-1160-C		
				1.000	66-1165	66-1165-C		
				1.250	66-1170	66-1170-C		
.530	.225	.980	3/16	.500	66-1175	66-1175-C	3/4	4”
				.750	66-1180	66-1180-C		
				1.000	66-1185	66-1185-C		
				1.250	66-1190	66-1190-C		



QUALITY TOOLING MADE IN THE USA

Carbide Cutting Tools

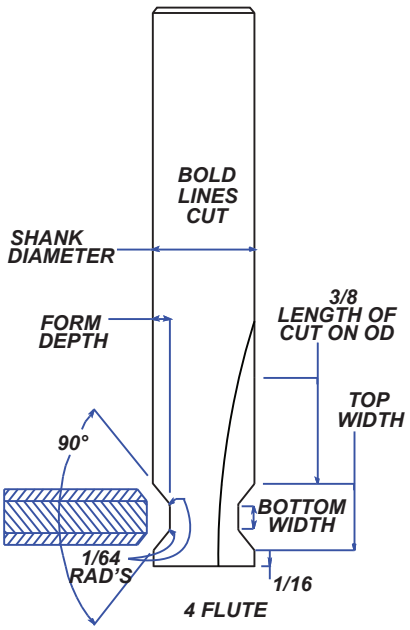
General Cutting Tools

SERIES 72 DOUBLE CHAMFER CUTTERS

APPLICATION : FOR CHAMFERING BOTH SIDES OF A PART OR PLATE

SHANK DIA	TOP WIDTH	FORM DEPTH	BOTTOM WIDTH	ORDER EDP #	ALTIN COATED EDP #	OVERALL LENGTH
.250	.100	.044	.020	72-1000	72-1000-C	2-1/2"
.312	.135	.050	.023	72-1020	72-1020-C	2-1/2"
.375	.160	.060	.028	72-1030	72-1030-C	2-1/2"
.500	.200	.080	.042	72-1040	72-1040-C	3"
.500	.260	.080	.089	72-1050	72-1050-C	3"
.500	.320	.080	.149	72-1060	72-1060-C	3"
.500	.375	.080	.214	72-1070	72-1070-C	3"
.500	.510	.080	.339	72-1080	72-1080-C	3"
.500	.635	.080	.464	72-1090	72-1090-C	3"
.500	.760	.100	.569	72-2000	72-2000-C	4"

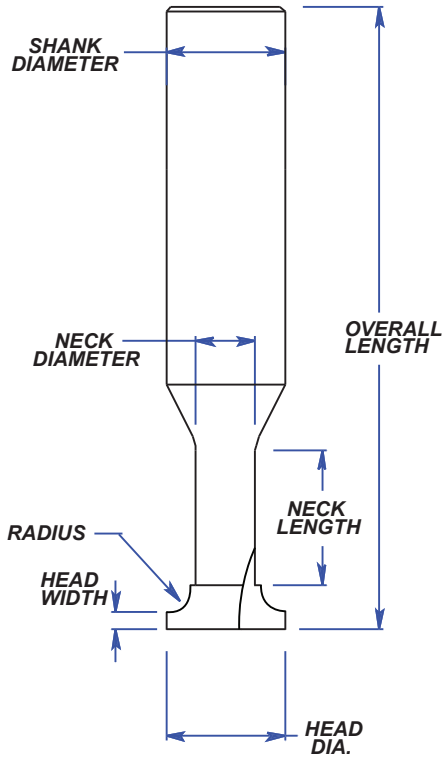




SERIES 67 REVERSE CORNER ROUNDERS

APPLICATION : FOR ROUNDING BACK OR INSIDE CORNERS

HEAD DIA.	RADIUS SIZE	NECK DIA	NECK LENGTH	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	HEAD WIDTH	OVERALL LENGTH
.187	.031	.110	.250	67-1400	67-1400-C	3/16	1/16	2-1/2"
			.500	67-1405	67-1405-C			
			.750	67-1410	67-1410-C			
.250	.047	.140	.375	67-1415	67-1415-C	1/4	1/16	2-1/2"
			.625	67-1420	67-1420-C			
			.875	67-1425	67-1425-C			
.312	.062	.170	.375	67-1430	67-1430-C	5/16	1/16	2-1/2"
			.625	67-1435	67-1435-C			
			.875	67-1440	67-1440-C			
			1.000	67-1445	67-1445-C			
.375	.093	.170	.500	67-1450	67-1450-C	3/8	3/32	2-1/2"
			.750	67-1455	67-1455-C			
			1.000	67-1460	67-1460-C			
			1.250	67-1465	67-1465-C			
.500	.125	.230	.500	67-1470	67-1470-C	1/2	3/32	3"
			.750	67-1475	67-1475-C			
			1.000	67-1480	67-1480-C			
			1.250	67-1485	67-1485-C			
.625	.187	.230	.500	67-1490	67-1490-C	5/8	3/32	3-1/2"
			.750	67-1495	67-1495-C			
			1.000	67-1500	67-1500-C			
			1.250	67-1505	67-1505-C			





ITI CARBIDE: HIGH TRANSVERSE RUPTURE STRENGTH

iTi Carbide Cutting Tools

CHAMFERING ENDMILLS

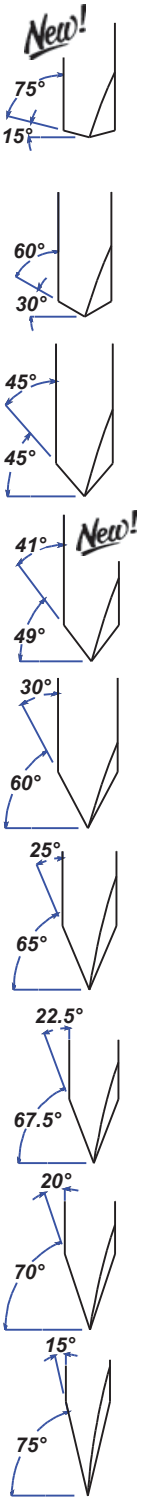
SERIES 64 SINGLE END CHAMFERMILL

APPLICATION : GROUND WITH POSITIVE AXIAL RAKE & CLEARANCE



2 FLUTE SINGLE END CHAMFER MILLS

INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA.	O.A.L.	ANGLE LENGTH
150° 2 FLUTE 75° PER SIDE	64-2740	64-2740	1/8	2”	.012
	64-2750	64-2750	3/16	2-1/2”	.021
	64-2760	64-2760	1/4	2-1/2”	.030
	64-2770	64-2770	5/16	2-1/2”	.039
	64-2780	64-2780	3/8	2-1/2”	.047
	64-2790	64-2790	1/2	3”	.064
120° 2 FLUTE 60° PER SIDE	64-2795	64-2795	1/8	2”	.035
	64-2800	64-2800	3/16	2-1/2”	.050
	64-2810	64-2810	1/4	2-1/2”	.060
	64-2820	64-2820	5/16	2-1/2”	.090
	64-2830	64-2830	3/8	2-1/2”	.105
	64-2840	64-2840	1/2	3”	.140
90° 2 FLUTE 45° PER SIDE	64-2845	64-2845	1/8	2”	.060
	64-2850	64-2850	3/16	2-1/2”	.090
	64-2860	64-2860	1/4	2-1/2”	.125
	64-2870	64-2870	5/16	2-1/2”	.156
	64-2880	64-2880	3/8	2-1/2”	.187
	64-2890	64-2890	1/2	3”	.250
82° 2 FLUTE 41° PER SIDE	64-2892	64-2892	1/8	2”	.070
	64-2894	64-2894	3/16	2-1/2”	.105
	64-2895	64-2895	1/4	2-1/2”	.140
	64-2896	64-2896	5/16	2-1/2”	.180
	64-2897	64-2897	3/8	2-1/2”	.200
	64-2898	64-2898	1/2	3”	.280
60° 2 FLUTE 30° PER SIDE	64-2899	64-2899	1/8	2”	.105
	64-2900	64-2900	3/16	2-1/2”	.160
	64-2910	64-2910	1/4	2-1/2”	.200
	64-2920	64-2920	5/16	2-1/2”	.270
	64-2930	64-2930	3/8	2-1/2”	.312
	64-2940	64-2940	1/2	3”	.420
50° 2 FLUTE 25° PER SIDE	64-7210	64-7210	1/8	2”	.130
	64-7215	64-7215	3/16	2-1/2”	.195
	64-7220	64-7220	1/4	2-1/2”	.250
	64-7225	64-7225	5/16	2-1/2”	.310
	64-7230	64-7230	3/8	2-1/2”	.375
	64-7235	64-7235	1/2	3”	.500
45° 2 FLUTE 22.5° PER SIDE	64-7237	64-7237	1/8	2”	.145
	64-7238	64-7238	3/16	2-1/2”	.220
	64-7240	64-7240	1/4	2-1/2”	.280
	64-7245	64-7245	5/16	2-1/2”	.350
	64-7250	64-7250	3/8	2-1/2”	.430
	64-7255	64-7255	1/2	3”	.580
40° 2 FLUTE 20° PER SIDE	64-7257	64-7257	1/8	2”	.165
	64-7258	64-7258	3/16	2-1/2”	.250
	64-7260	64-7260	1/4	2-1/2”	.320
	64-7265	64-7265	5/16	2-1/2”	.405
	64-7270	64-7270	3/8	2-1/2”	.490
	64-7275	64-7275	1/2	3”	.660
30° 2 FLUTE 15° PER SIDE	64-7280	64-7280	1/8	2”	.215
	64-7285	64-7285	3/16	2-1/2”	.340
	64-7290	64-7290	1/4	2-1/2”	.460
	64-7295	64-7295	5/16	2-1/2”	.580
	64-7300	64-7300	3/8	2-1/2”	.690
	64-7305	64-7305	1/2	3”	.920





4 FLUTE SINGLE END CHAMFER MILLS

INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA.	O.A.L.	ANGLE LENGTH
150° 4 FLUTE 75° PER SIDE	64-4730	64-4730-C	1/8	2”	.012
	64-4740	64-4740-C	3/16	2-1/2”	.021
	64-4750	64-4750-C	1/4	2-1/2”	.030
	64-4760	64-4760-C	5/16	2-1/2”	.039
	64-4780	64-4780-C	3/8	2-1/2”	.047
	64-4790	64-4790-C	1/2	3”	.064
120° 4 FLUTE 60° PER SIDE	64-4795	64-4795-C	1/8	2”	.035
	64-4800	64-4800-C	3/16	2-1/2”	.050
	64-4810	64-4810-C	1/4	2-1/2”	.060
	64-4820	64-4820-C	5/16	2-1/2”	.090
	64-4830	64-4830-C	3/8	2-1/2”	.105
	64-4840	64-4840-C	1/2	3”	.140
90° 4 FLUTE 45° PER SIDE	64-4845	64-4845-C	1/8	2”	.060
	64-4850	64-4850-C	3/16	2-1/2”	.090
	64-4860	64-4860-C	1/4	2-1/2”	.125
	64-4870	64-4870-C	5/16	2-1/2”	.156
	64-4880	64-4880-C	3/8	2-1/2”	.187
	64-4890	64-4890-C	1/2	3”	.250
82° 4 FLUTE 41° PER SIDE	64-4891	64-4891-C	1/8	2”	.070
	64-4892	64-4892-C	3/16	2-1/2”	.105
	64-4893	64-4893-C	1/4	2-1/2”	.140
	64-4894	64-4894-C	5/16	2-1/2”	.180
	64-4895	64-4895-C	3/8	2-1/2”	.200
	64-4896	64-4896-C	1/2	3”	.280
60° 4 FLUTE 30° PER SIDE	64-4898	64-4898-C	1/8	2”	.105
	64-4900	64-4900-C	3/16	2-1/2”	.160
	64-4910	64-4910-C	1/4	2-1/2”	.200
	64-4920	64-4920-C	5/16	2-1/2”	.270
	64-4930	64-4930-C	3/8	2-1/2”	.312
	64-4940	64-4940-C	1/2	3”	.420
50° 4 FLUTE 25° PER SIDE	64-7380	64-7380-C	1/8	2”	.130
	64-7390	64-7390-C	3/16	2-1/2”	.195
	64-7400	64-7400-C	1/4	2-1/2”	.250
	64-7402	64-7402-C	5/16	2-1/2”	.310
	64-7410	64-7410-C	3/8	2-1/2”	.375
	64-7415	64-7415-C	1/2	3”	.500
45° 4 FLUTE 22.5° PER SIDE	64-7416	64-7416-C	1/8	2”	.145
	64-7418	64-7418-C	3/16	2-1/2”	.220
	64-7420	64-7420-C	1/4	2-1/2”	.280
	64-7425	64-7425-C	5/16	2-1/2”	.350
	64-7430	64-7430-C	3/8	2-1/2”	.430
	64-7435	64-7435-C	1/2	3”	.580
40° 4 FLUTE 20° PER SIDE	64-7438	64-7438-C	1/8	2”	.165
	64-7439	64-7439-C	3/16	2-1/2”	.250
	64-7440	64-7440-C	1/4	2-1/2”	.320
	64-7445	64-7445-C	5/16	2-1/2”	.405
	64-7450	64-7450-C	3/8	2-1/2”	.490
	64-7455	64-7455-C	1/2	3”	.660
30° 4 FLUTE 15° PER SIDE	64-7460	64-7460-C	1/8	2”	.215
	64-7465	64-7465-C	3/16	2-1/2”	.340
	64-7470	64-7470-C	1/4	2-1/2”	.460
	64-7475	64-7475-C	5/16	2-1/2”	.580
	64-7480	64-7480-C	3/8	2-1/2”	.690
	64-7485	64-7485-C	1/2	3”	.920

SERIES 64 LONG SINGLE END CHAMFERMILL

APPLICATION : GROUND WITH POSITIVE AXIAL RAKE & CLEARANCE



2 FLUTE LONG REACH CHAMFER MILLS

INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	O.A.L.	ANGLE LENGTH
120° 2 FLUTE 60° PER SIDE	64-6800	64-6800-C	3/16	4”	.050
	64-6810	64-6810-C	1/4	4”	.060
	64-6820	64-6820-C	5/16	4”	.090
	64-6830	64-6830-C	3/8	6”	.105
	64-6840	64-6840-C	1/2	6”	.140
90° 2 FLUTE 45° PER SIDE	64-6850	64-6850-C	3/16	4”	.090
	64-6860	64-6860-C	1/4	4”	.125
	64-6870	64-6870-C	5/16	4”	.156
	64-6880	64-6880-C	3/8	6”	.187
	64-6890	64-6890-C	1/2	6”	.250
60° 2 FLUTE 30° PER SIDE	64-6900	64-6900-C	3/16	4”	.160
	64-6910	64-6910-C	1/4	4”	.200
	64-6920	64-6920-C	5/16	4”	.270
	64-6930	64-6930-C	3/8	6”	.312
	64-6940	64-6940-C	1/2	6”	.420



4 FLUTE LONG REACH CHAMFER MILLS

INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	O.A.L.	ANGLE LENGTH
120° 4 FLUTE 60° PER SIDE	64-8800	64-8800-C	3/16	4”	.050
	64-8810	64-8810-C	1/4	4”	.060
	64-8820	64-8820-C	5/16	4”	.090
	64-8830	64-8830-C	3/8	6”	.105
	64-8840	64-8840-C	1/2	6”	.140
90° 4 FLUTE 45° PER SIDE	64-8850	64-8850-C	3/16	4”	.090
	64-8860	64-8860-C	1/4	4”	.125
	64-8870	64-8870-C	5/16	4”	.156
	64-8880	64-8880-C	3/8	6”	.187
	64-8890	64-8890-C	1/2	6”	.250
60° 4 FLUTE 30° PER SIDE	64-8900	64-8900-C	3/16	4”	.160
	64-8910	64-8910-C	1/4	4”	.200
	64-8920	64-8920-C	5/16	4”	.270
	64-8930	64-8930-C	3/8	6”	.312
	64-8940	64-8940-C	1/2	6”	.420

LONG DOUBLE END CHAMFERMILL

APPLICATION : GROUND WITH POSITIVE AXIAL RAKE & CLEARANCE

New!

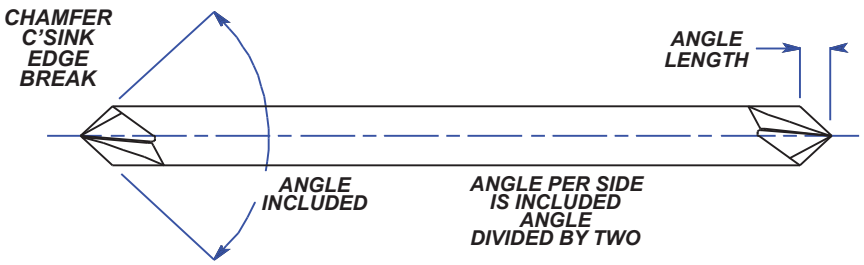
2 FLUTE LONG REACH CHAMFER MILLS

INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	O.A.L.	ANGLE LENGTH
120° 2 FLUTE 60° PER SIDE	64-9000	64-9000-C	3/16	4”	.050
	64-9010	64-9010-C	1/4	4”	.060
	64-9020	64-9020-C	5/16	4”	.090
	64-9030	64-9030-C	3/8	6”	.105
	64-9040	64-9040-C	1/2	6”	.140
90° 2 FLUTE 45° PER SIDE	64-9050	64-9050-C	3/16	4”	.090
	64-9060	64-9060-C	1/4	4”	.125
	64-9070	64-9070-C	5/16	4”	.156
	64-9080	64-9080-C	3/8	6”	.187
	64-9090	64-9090-C	1/2	6”	.250
60° 2 FLUTE 30° PER SIDE	64-9100	64-9100-C	3/16	4”	.160
	64-9110	64-9110-C	1/4	4”	.200
	64-9120	64-9120-C	5/16	4”	.270
	64-9130	64-9130-C	3/8	6”	.312
	64-9140	64-9140-C	1/2	6”	.420

New!

4 FLUTE LONG REACH CHAMFER MILLS

INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	O.A.L.	ANGLE LENGTH
120° 4 FLUTE 60° PER SIDE	64-9150	64-9150-C	3/16	4”	.050
	64-9160	64-9160-C	1/4	4”	.060
	64-9170	64-9170-C	5/16	4”	.090
	64-9180	64-9180-C	3/8	6”	.105
	64-9190	64-9190-C	1/2	6”	.140
90° 4 FLUTE 45° PER SIDE	64-9200	64-9200-C	3/16	4”	.090
	64-9210	64-9210-C	1/4	4”	.125
	64-9220	64-9220-C	5/16	4”	.156
	64-9230	64-9230-C	3/8	6”	.187
	64-9240	64-9240-C	1/2	6”	.250
60° 4 FLUTE 30° PER SIDE	64-9250	64-9250-C	3/16	4”	.160
	64-9260	64-9260-C	1/4	4”	.200
	64-9270	64-9270-C	5/16	4”	.270
	64-9280	64-9280-C	3/8	6”	.312
	64-9290	64-9290-C	1/2	6”	.420



ITI CARBIDE: PREMIUM SUBMICRON GRADE CARBIDE

Carbide Cutting Tools

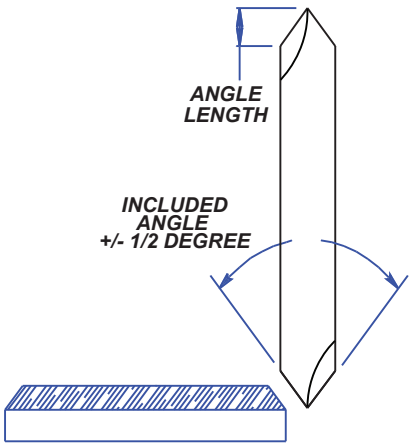
SERIES 64 2 FLUTE DOUBLE END CHAMFER MILL

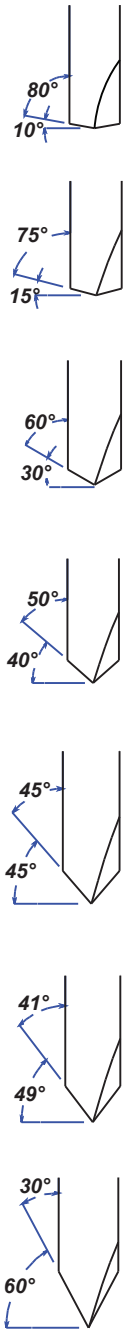
APPLICATION : GROUND WITH POSITIVE AXIAL RAKE & CLEARANCE PRIMARILY FOR ALUMINUM & SOFTER MATERIALS

- *CHAMFER*
- *C'SINK*
- *EDGE BREAK*

2 FLUTE DOUBLE END CHAMFER MILLS







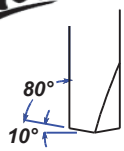
INCLUDED ANGLE	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	O.A.L.	ANGLE LENGTH
160° 2 FLUTE 80° PER SIDE	64-1115	64-1115-C	1/8	2"	.007
	64-1120	64-1120-C	3/16	2-1/2"	.012
	64-1125	64-1125-C	1/4	2-1/2"	.019
	64-1130	64-1130-C	5/16	2-1/2"	.025
	64-1135	64-1135-C	3/8	2-1/2"	.030
	64-1140	64-1140-C	1/2	3"	.040
150 ° 2 FLUTE 75 ° PER SIDE	64-1145	64-1145-C	1/8	2"	.012
	64-1150	64-1150-C	3/16	2-1/2"	.021
	64-1155	64-1155-C	1/4	2-1/2"	.030
	64-1160	64-1160-C	5/16	2-1/2"	.039
	64-1165	64-1165-C	3/8	2-1/2"	.047
	64-1170	64-1170-C	1/2	3"	.064
120° 2 FLUTE 60° PER SIDE	64-1175	64-1175-C	1/8	2"	.035
	64-1180	64-1180-C	3/16	2-1/2"	.050
	64-1200	64-1200-C	1/4	2-1/2"	.060
	64-1203	64-1203-C	5/16	2-1/2"	.090
	64-1205	64-1205-C	3/8	2-1/2"	.105
	64-1210	64-1210-C	1/2	3"	.140
	64-1211	64-1211-C	5/8	3-1/2"	.180
100° 2 FLUTE 50° PER SIDE	64-2200	64-2200-C	1/8	2"	.050
	64-2205	64-2205-C	3/16	2-1/2"	.075
	64-2210	64-2210-C	1/4	2-1/2"	.100
	64-2215	64-2215-C	5/16	2-1/2"	.130
	64-2220	64-2220-C	3/8	2-1/2"	.155
	64-2225	64-2225-C	1/2	3"	.205
	64-2230	64-2230-C	5/8	3-1/2"	.260
90° 2 FLUTE 45° PER SIDE	64-1212	64-1212-C	1/8	2"	.060
	64-1213	64-1213-C	3/16	2-1/2"	.090
	64-1215	64-1215-C	1/4	2-1/2"	.125
	64-1217	64-1217-C	5/16	2-1/2"	.156
	64-1220	64-1220-C	3/8	2-1/2"	.187
	64-1225	64-1225-C	1/2	3"	.250
	64-1226	64-1226-C	5/8	3-1/2"	.310
	64-1229	64-1229-C	3/4	4"	.370
	64-1231	64-1231-C	1	4"	.490
82° 2 FLUTE 41° PER SIDE	64-1224	64-1224-C	1/8	2"	.070
	64-1227	64-1227-C	3/16	2-1/2"	.105
	64-1230	64-1230-C	1/4	2-1/2"	.140
	64-1232	64-1232-C	5/16	2-1/2"	.180
	64-1235	64-1235-C	3/8	2-1/2"	.200
	64-1240	64-1240-C	1/2	3"	.280
	64-1241	64-1241-C	5/8	3-1/2"	.350
60° 2 FLUTE 30° PER SIDE	64-1239	64-1239-C	1/8	2"	.105
	64-1242	64-1242-C	3/16	2-1/2"	.160
	64-1245	64-1245-C	1/4	2-1/2"	.200
	64-1247	64-1247-C	5/16	2-1/2"	.270
	64-1250	64-1250-C	3/8	2-1/2"	.312
	64-1255	64-1255-C	1/2	3"	.420
	64-1260	64-1260-C	5/8	3-1/2"	.540

APPLICATION : GROUND WITH RAKE & CLEARANCE FOR STEEL & TOUGHER MATERIALS

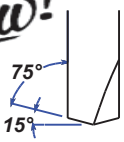
4 FLUTE DOUBLE END CHAMFER MILLS

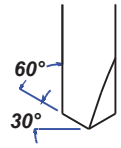
- CHAMFER
- C'SINK
- EDGE BREAK

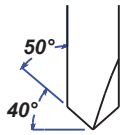
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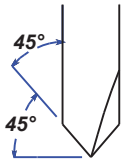


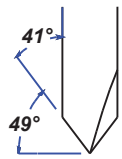
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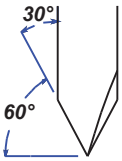






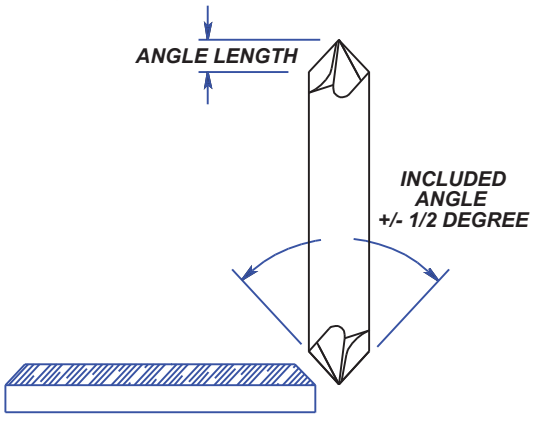






INCLUDED ANGLE	EDP #	ALTIN COATED EDP #	SHANK DIA	O.A.L.	ANGLE LENGTH
160° 4 FLUTE 80° PER SIDE	64-1330	64-1330-C	1/8	2"	.007
	64-1335	64-1335-C	3/16	2-1/2"	.012
	64-1340	64-1340-C	1/4	2-1/2"	.019
	64-1345	64-1345-C	5/16	2-1/2"	.025
	64-1350	64-1350-C	3/8	2-1/2"	.030
	64-1355	64-1355-C	1/2	3"	.040
150° 4 FLUTE 75° PER SIDE	64-1360	64-1360-C	1/8	2"	.012
	64-1365	64-1365-C	3/16	2-1/2"	.021
	64-1370	64-1370-C	1/4	2-1/2"	.030
	64-1375	64-1375-C	5/16	2-1/2"	.039
	64-1380	64-1380-C	3/8	2-1/2"	.047
	64-1385	64-1385-C	1/2	3"	.064
120° 4 FLUTE 60° PER SIDE	64-1390	64-1390-C	1/8	2"	.035
	64-1395	64-1395-C	3/16	2-1/2"	.050
	64-1400	64-1400-C	1/4	2-1/2"	.060
	64-1403	64-1403-C	5/16	2-1/2"	.090
	64-1405	64-1405-C	3/8	2-1/2"	.105
	64-1410	64-1410-C	1/2	3"	.140
	64-1411	64-1411-C	5/8	3-1/2"	.180
100° 4 FLUTE 50° PER SIDE	64-4400	64-4400-C	1/8	2"	.050
	64-4405	64-4405-C	3/16	2-1/2"	.075
	64-4410	64-4410-C	1/4	2-1/2"	.100
	64-4415	64-4415-C	5/16	2-1/2"	.130
	64-4420	64-4420-C	3/8	2-1/2"	.155
	64-4425	64-4425-C	1/2	3"	.205
	64-4430	64-4430-C	5/8	3-1/2"	.260
90° 4 FLUTE 45° PER SIDE	64-1412	64-1412-C	1/8	2"	.060
	64-1413	64-1413-C	3/16	2-1/2"	.090
	64-1415	64-1415-C	1/4	2-1/2"	.125
	64-1417	64-1417-C	5/16	2-1/2"	.156
	64-1420	64-1420-C	3/8	2-1/2"	.187
	64-1425	64-1425-C	1/2	3"	.250
	64-1426	64-1426-C	5/8	3-1/2"	.310
	64-1429	64-1429-C	3/4	4"	.370
	64-1431	64-1431-C	1	4"	.490
82° 4 FLUTE 41° PER SIDE	64-1424	64-1424-C	1/8	2"	.070
	64-1427	64-1427-C	3/16	2-1/2"	.105
	64-1430	64-1430-C	1/4	2-1/2"	.140
	64-1432	64-1432-C	5/16	2-1/2"	.180
	64-1435	64-1435-C	3/8	2-1/2"	.200
	64-1440	64-1440-C	1/2	3"	.280
	64-1441	64-1441-C	5/8	3-1/2"	.350
60° 4 FLUTE 30° PER SIDE	64-1439	64-1439-C	1/8	2"	.105
	64-1442	64-1442-C	3/16	2-1/2"	.160
	64-1445	64-1445-C	1/4	2-1/2"	.200
	64-1447	64-1447-C	5/16	2-1/2"	.270
	64-1450	64-1450-C	3/8	2-1/2"	.312
	64-1455	64-1455-C	1/2	3"	.420
	64-1460	64-1460-C	5/8	3-1/2"	.540





CORNER ROUNDING ENDMILLS

SERIES 68 CORNER ROUNDING ENDMILLS

APPLICATION : USE IN TIGHT SPOTS WHERE THE TIP DIA NEEDS TO BE SMALLER OR IN SOFTER MATERIALS THAT CAN TAKE HIGHER RPMS

2 FLUTE DOUBLE END

SHANK DIA	RADIUS SIZE	MINOR DIA	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/8	.0050	.040	68-1500	68-1500-C	2”
	.0079 (0.2MM)	.040	68-1505	68-1505-C	
	.0100	.040	68-1510	68-1510-C	
	.0118 (0.3MM)	.040	68-1515	68-1515-C	
	.0150	.040	68-1520	68-1520-C	
	.0157 (0.4MM)	.040	68-1525	68-1525-C	
	.0197 (0.5MM)	.040	68-1530	68-1530-C	
	.0200	.040	68-1535	68-1535-C	
	.0236 (0.6MM)	.040	68-1540	68-1540-C	
	.0250	.040	68-1545	68-1545-C	
	.0276 (0.7MM)	.040	68-1550	68-1550-C	
	.0300	.040	68-1555	68-1555-C	
	.0312 (1/32)	.040	68-1560	68-1560-C	
	.0315 (0.8MM)	.040	68-1565	68-1565-C	
	.0354 (0.9MM)	.040	68-1570	68-1570-C	
	.0394 (1.0MM)	.040	68-1575	68-1575-C	
3/16	.0469 (3/64)	.040	68-1580	68-1580-C	2”
	.0500	.040	68-1585	68-1585-C	
	.0591 (1.5MM)	.040	68-1590	68-1590-C	
	.0600	.040	68-1595	68-1595-C	
	.0625 (1/16)	.040	68-1600	68-1600-C	

SHANK DIA	RADIUS SIZE	MINOR DIA	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/4	.0781 (5/64)	.040	68-1605	68-1605-C	2-1/2”
	.0787 (2.0MM)	.040	68-1610	68-1610-C	
	.0938 (3/32)	.040	68-1615	68-1615-C	
	.0984 (2.5MM)	.040	68-1620	68-1620-C	
5/16	.1094 (7/64)	.055	68-1625	68-1625-C	2-1/2”
	.1181 (3.0MM)	.055	68-1630	68-1630-C	
	.1250 (1/8)	.055	68-1635	68-1635-C	
3/8	.1378 (3.5MM)	.055	68-1640	68-1640-C	2-1/2”
	.1406 (9/64)	.055	68-1645	68-1645-C	
	.1562 (5/32)	.055	68-1650	68-1650-C	
	.1575 (4.0MM)	.055	68-1655	68-1655-C	
1/2	.1719 (11/64)	.055	68-1660	68-1660-C	3”
	.1772 (4.5MM)	.055	68-1665	68-1665-C	
	.1875 (3/16)	.055	68-1670	68-1670-C	
	.1969 (5.0MM)	.055	68-1675	68-1675-C	
	.2031 (13/64)	.055	68-1680	68-1680-C	
	.2165 (5.5MM)	.055	68-1685	68-1685-C	
	.2188 (7/32)	.055	68-1690	68-1690-C	
5/8	.2344 (15/64)	.105	68-1695	68-1695-C	3-1/2”
	.2362 (6.0MM)	.105	68-1700	68-1700-C	
	.2500 (1/4)	.105	68-1705	68-1705-C	



SERIES 170 LONG REACH ENDMILLS

APPLICATION : LONGER REACH THAN NORMAL CORNER ROUNDING ENDMILLS

3 FLUTE SINGLE END CORNER ROUNDING ENDMILLS



SHANK DIA	RADIUS SIZE	MINOR DIA	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/8	.0100	.100	170-1000	170-1000-C	3”
	.0156 (1/64)	.090	170-1010	170-1010-C	
	.0200	.080	170-1020	170-1020-C	
	.0312 (1/32)	.060	170-1030	170-1030-C	
3/16	.0156 (1/64)	.040	170-1040	170-1040-C	4”
	.0312 (1/32)	.040	170-1050	170-1050-C	
	.0625 (1/16)	.060	170-1060	170-1060-C	
1/4	.0100	.140	170-1070	170-1070-C	4”
	.0156 (1/64)	.140	170-1080	170-1080-C	
	.0200	.140	170-1090	170-1090-C	
	.0312 (1/32)	.140	170-1100	170-1100-C	
	.0394 (1MM)	.140	170-1110	170-1110-C	
	.0469 (3/64)	.140	170-1120	170-1120-C	
	.0591 (1.5MM)	.090	170-1130	170-1130-C	
	.0625 (1/16	.090	170-1140	170-1140-C	
	.0700	.090	170-1150	170-1150-C	

SHANK DIA	RADIUS SIZE	MINOR DIA	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
3/8	.0781 (5/64)	.115	170-1160	170-1160-C	4”
	.0787 (2MM)	.115	170-1170	170-1170-C	
	.0938 (3/32)	.115	170-1180	170-1180-C	
	.0984 (2.5MM)	.115	170-1190	170-1190-C	
	.1098 (7/64)	.115	170-1200	170-1200-C	
	.1181 (3MM)	.115	170-1210	170-1210-C	
	.1250 (1/8)	.115	170-1220	170-1220-C	
1/2	.1400 (9/64)	.120	170-1230	170-1230-C	6”
	.1562 (5/32)	.120	170-1240	170-1240-C	
	.1575 (4MM)	.120	170-1250	170-1250-C	
	.1718 (11/64)	.120	170-1260	170-1260-C	
	.1875 (3/16)	.120	170-1270	170-1270-C	
5/8	.234 (15/64)	.105	170-1280	170-1280-C	6”
	.2362 (6MM)	.105	170-1290	170-1290-C	
	.250 (1/4)	.105	170-1300	170-1300-C	

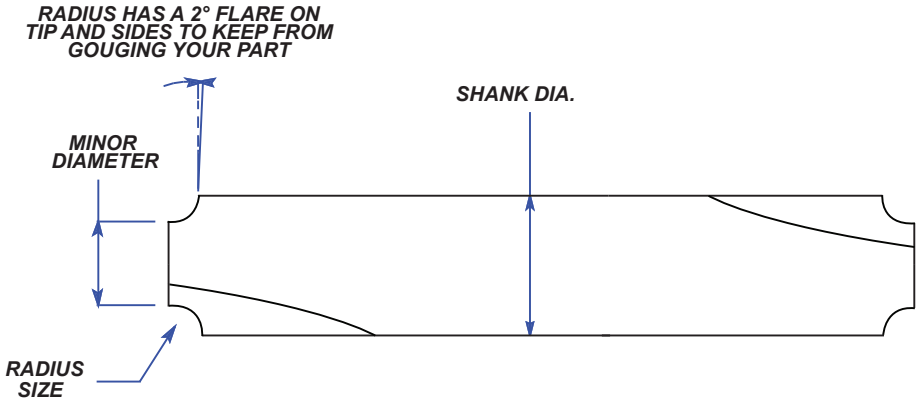
APPLICATION : USE IN STEEL OR TOUGHER MATERIALS ALSO AVAILABLE ALTIN COATED

DOUBLE END
3 FLUTE CORNER ROUNDING ENDMILLS

SHANK DIA	RADIUS SIZE	MINOR DIA	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
1/8	.010	.100	68-1200	68-1200-C	2”
	.0156 (1/64)	.090	68-1205	68-1205-C	
	.020	.080	68-1210	68-1210-C	
	.025	.070	68-1215	68-1215-C	
	.0312 (1/32)	.060	68-1220	68-1220-C	
3/16	.0156 (1/64)	.040	68-1221	68-1221-C	2”
	.0312 (1/32)	.040	68-1222	68-1222-C	
	.0625 (1/16)	.060	68-1223	68-1223-C	
1/4	.010	.140	68-1225	68-1225-C	2-1/2”
	.0156 (1/64)	.140	68-1230	68-1230-C	
	.020	.140	68-1235	68-1235-C	
	.025	.140	68-1240	68-1240-C	
	.0312 (1/32)	.140	68-1245	68-1245-C	
	.035	.140	68-1250	68-1250-C	
	.0394 (1MM)	.140	68-1255	68-1255-C	
	.0469 (3/64)	.140	68-1260	68-1260-C	
	.050	.140	68-1265	68-1265-C	
	.055	.090	68-1270	68-1270-C	
	.0591 (1.5MM)	.090	68-1275	68-1275-C	
	.0625 (1/16)	.090	68-1280	68-1280-C	
	.070	.090	68-1285	68-1285-C	
	.075	.090	68-1290	68-1290-C	

SHANK DIA	RADIUS SIZE	MINOR DIA	ORDER EDP #	ALTIN COATED EDP #	O.A.L.
3/8	.0781 (5/64)	.115	68-1295	68-1295-C	2-1/2”
	.0787 (2MM)	.115	68-1297	68-1297-C	
	.0938 (3/32)	.115	68-1300	68-1300-C	
	.0984 (2.5MM)	.115	68-1302	68-1302-C	
	.1094 (7/64)	.115	68-1305	68-1305-C	
	.1181 (3MM)	.115	68-1307	68-1307-C	
	.125 (1/8)	.115	68-1310	68-1310-C	
1/2	.140 (9/64)	.120	68-1312	68-1312-C	3”
	.1562 (5/32)	.120	68-1315	68-1315-C	
	.1575 (4MM)	.120	68-1317	68-1317-C	
	.1718 (11/64)	.120	68-1320	68-1320-C	
	.1875 (3/16)	.120	68-1325	68-1325-C	
5/8	.1969 (5MM)	.120	68-1327	68-1327-C	3-1/2”
	.2031 (13/64)	.120	68-1330	68-1330-C	
	.2188 (7/32)	.120	68-1335	68-1335-C	
	.2344 (15/64)	.120	68-1340	68-1340-C	
	.2362 (6MM)	.120	68-1342	68-1342-C	
	.250 (1/4)	.120	68-1345	68-1345-C	
3/4	.2812 (9/32)	.120	68-1350	68-1350-C	4”
	.2969 (19/64)	.120	68-1352	68-1352-C	
	.3125 (5/16)	.120	68-1355	68-1355-C	
1”	.3281 (21/64)	.240	68-1360	68-1360-C	4”
	.3438 (11/32)	.240	68-1365	68-1365-C	
	.375 (3/8)	.240	68-1370	68-1370-C	





CORNER ROUNDING ENDMILLS

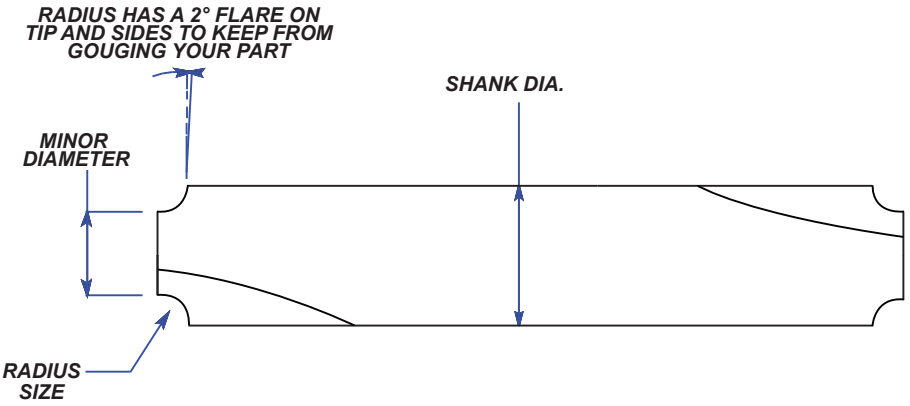
SERIES 168 MAX ROUNDER

APPLICATION : MILLING TOUGH MATERIALS STAINLESS, TITANIUM, 4140, 4340, D2, NICKEL, MONEL, INCONEL, INCONEL, ECT.

ALL TOOLS ARE DOUBLE END AND ALTIN COATED STANDARD

SHANK DIA	RADIUS SIZE	# OF FLUTES	MINOR DIA	ORDER EDP #	O.A.L.
1/4	.0100	6	0.199	168-1000	2-1/2”
	.0150	6	0.189	168-1005	
	.0200	6	0.179	168-1010	
	.0312 (1/32)	6	0.157	168-1015	
3/8	.0312 (1/32)	6	0.282	168-1020	
	.0394 (1MM)	6	0.265	168-1025	
	.0469 (3/64)	6	0.250	168-1030	
	.0591 (1.5MM)	6	0.226	168-1035	
	.0625 (1/16)	6	0.219	168-1040	
1/2	.0625 (1/16)	5	0.344	168-1045	3”
	.0700	5	0.329	168-1050	
	.0750	5	0.319	168-1055	
	.0781 (5/64)	5	0.312	168-1060	
	.0787 (2MM)	5	0.311	168-1065	
	.0938 (3/32)	5	0.281	168-1070	
	.0984 (2.5MM)	5	0.272	168-1075	
	.1094 (7/64)	5	0.251	168-1080	
	.1181 (3MM)	5	0.233	168-1085	
	.1250 (1/8)	5	0.219	168-1090	
5/8	.1250 (1/8)	5	0.343	168-1095	3-1/2”
	.1562 (5/32)	5	0.281	168-1100	
	.1875 (3/16)	5	0.219	168-1105	
1”	.1250 (1/8)	6	0.719	168-1110	4”
	.1562 (5/32)	6	0.656	168-1115	
	.1575 (4MM)	6	0.657	168-1120	
	.1875 (3/16)	6	0.594	168-1125	
	.1969 (5MM)	6	0.575	168-1130	
	.2031 (13/64)	6	0.563	168-1135	
	.2188 (7/32)	6	0.533	168-1140	
	.2344 (15/64)	6	0.501	168-1145	
	.2362 (6MM)	6	0.496	168-1150	
	.2500 (1/4)	6	0.469	168-1155	

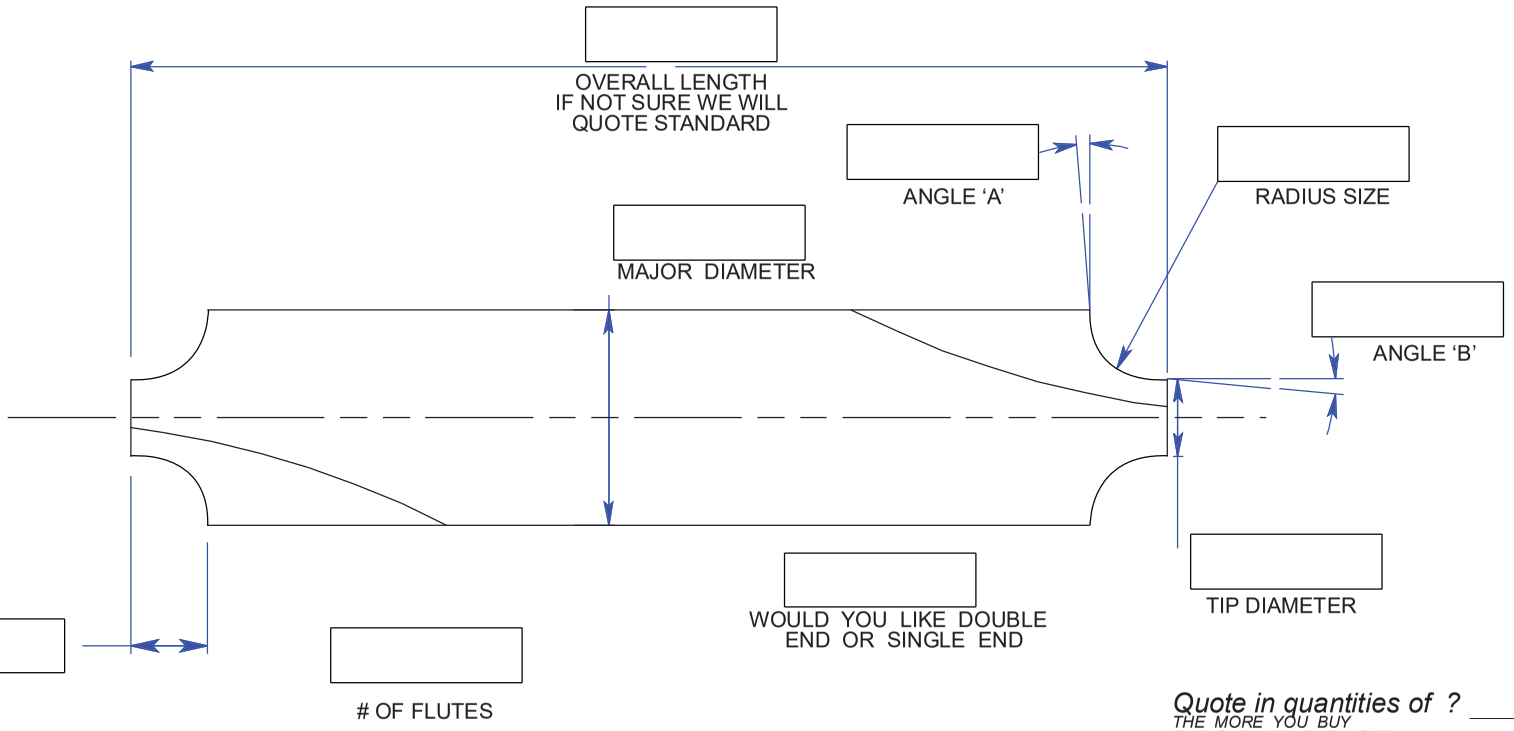




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INTERNAL TOOL

ITI CARBIDE

DRAWN BY:	DATE:	REV:
TOOL NUMBER:		

TOLERANCE UNLESS OTHERWISE SPECIFIED
.X = +/- 1/32 .XX = +/- .010 .XXX = +/- .002 .XXXX = /- .0005 ANGLES +/- 0.15

SERIES 76 SOLID CARBIDE KEY CUTTERS

APPLICATION : ALL CLEARANCE ANGLES, RAKE ANGLES AND DISH CLEARANCE SPECIFICALLY ENGINEERED AND DESIGNED FOR CUTTING SOFTER MATERIALS ALUMINUM, PLASTICS, ETC.

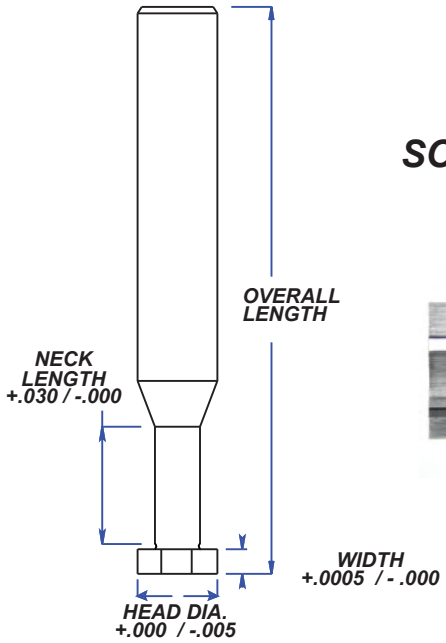
SOFT MATERIAL CUTTING SOLID CARBIDE KEY CUTTERS

STOCKED WITH ZRN COATING

HEAD DIA +.000 / -.005	WIDTH	ORDER EDP #	Z.R.N. COATED EDP #	NECK DIA	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	OVERALL LENGTH
1/4	.0150	76-1400	76-1400-C	.125	.062	1/4	1/4	4	2-1/2”
	.0312	76-1435	76-1435-C	.125	.062				
	.0625	76-1455	76-1455-C	.125	.062				
5/16	.0150	76-1460	76-1460-C	.150	.081	5/16	5/16	4	2-1/2”
	.0312	76-1470	76-1470-C	.150	.081				
	.0625	76-1480	76-1480-C	.150	.081				
	.0938	76-1485	76-1485-C	.150	.081				
	.1250	76-1490	76-1490-C	.150	.081				
3/8	.0312	76-1500	76-1500-C	.200	.087	3/8	3/8	4	2-1/2”
	.0625	76-1510	76-1510-C	.200	.087				
	.0938	76-1515	76-1515-C	.200	.087				
	.1250	76-1520	76-1520-C	.200	.087				
	.1875	76-1530	76-1530-C	.200	.087				
1/2	.0312	76-1535	76-1535-C	.250	.125	3/8	1/2	6	3”
	.0625	76-1545	76-1545-C	.250	.125				
	.0938	76-1550	76-1550-C	.250	.125				
	.1250	76-1555	76-1555-C	.250	.125				
	.1562	76-1560	76-1560-C	.250	.125				
	.1875	76-1565	76-1565-C	.250	.125				
	.2500	76-1570	76-1570-C	.250	.125				

-C = ZRN COATING FOR SERIES 76





KEY CUTTERS FOR SOFTER MATERIALS

FOR ALUMINUM

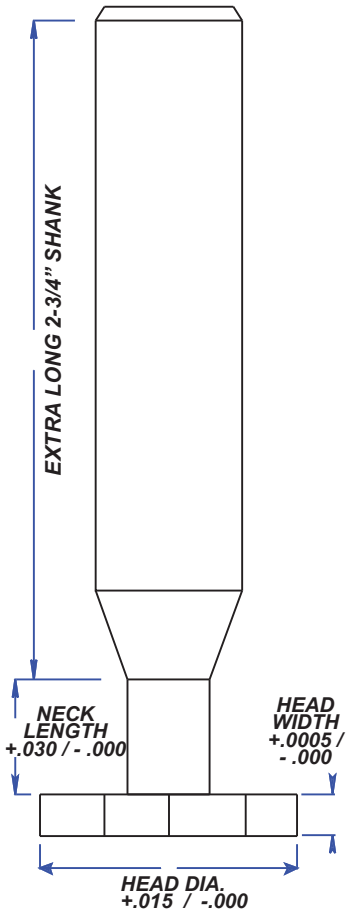


ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.

SERIES 78 SOFT MATERIAL CARBIDE HEAD STEEL SHANK KEY CUTTERS

KEY CUTTERS

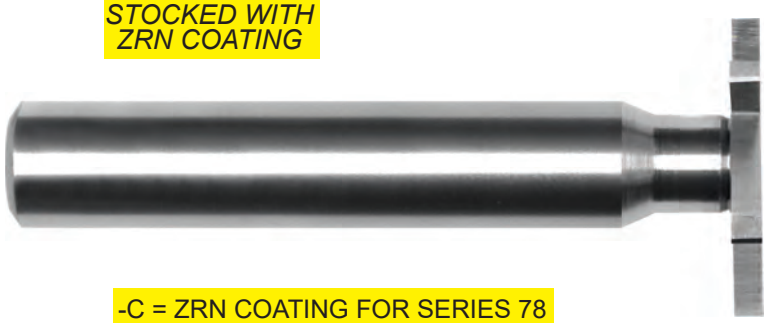
APPLICATION : ALL CLEARANCE ANGLES, RAKE ANGLES AND DISH CLEARANCE SPECIFICALLY ENGINEERED AND DESIGNED FOR CUTTING SOFTER MATERIALS ALUMINUM, PLASTICS, ETC.



HEAD DIA +.015 / -.000	WIDTH	ORDER EDP #	Z.R.N. COATED EDP #	NECK DIA	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	OVERALL LENGTH
5/8	.0312	78-1660	78-1660-C	.280	.172	1/4	1/2	6	2-3/4"
	.0625	78-1670	78-1670-C	.280	.172				
	.0938	78-1680	78-1680-C	.280	.172				
	.1250	78-1690	78-1690-C	.280	.172				
	.1562	78-1700	78-1700-C	.280	.172				
	.1875	78-1705	78-1705-C	.280	.172				
	.2500	78-1720	78-1720-C	.280	.172				
3/4	.0312	78-1728	78-1728-C	.280	.235	1/4	1/2	6	2-3/4"
	.0625	78-1730	78-1730-C	.280	.235				
	.0938	78-1740	78-1740-C	.280	.235				
	.1250	78-1750	78-1750-C	.280	.235				
	.1562	78-1760	78-1760-C	.280	.235				
	.1875	78-1765	78-1765-C	.280	.235				
	.2500	78-1785	78-1785-C	.280	.235				
	.3125	78-1800	78-1800-C	.490	.130				
	.3750	78-1810	78-1810-C	.490	.130				
7/8	.0625	78-1813	78-1813-C	.280	.297	1/4	1/2	6	2-3/4"
	.1250	78-1815	78-1815-C	.280	.297				
	.1875	78-1825	78-1825-C	.280	.297				
	.2500	78-1835	78-1835-C	.280	.297				
1"	.0312	78-1846	78-1846-C	.280	.360	1/4	1/2	6	2-3/4"
	.0625	78-1850	78-1850-C	.280	.360				
	.0938	78-1855	78-1855-C	.280	.360				
	.1250	78-1860	78-1860-C	.280	.360				
	.1562	78-1862	78-1862-C	.280	.360				
	.1875	78-1865	78-1865-C	.490	.255				
	.2500	78-1875	78-1875-C	.490	.255				
	.3125	78-1885	78-1885-C	.490	.255				
	.3750	78-1890	78-1890-C	.490	.255				
1-1/4	.0312	78-1912	78-1912-C	.280	.485	1/4	1/2	6	2-3/4"
	.0625	78-1915	78-1915-C	.280	.485				
	.0938	78-1920	78-1920-C	.280	.485				
	.1250	78-1925	78-1925-C	.280	.485				
	.1875	78-1932	78-1932-C	.490	.380				
	.2500	78-1940	78-1940-C	.490	.380				
	.3125	78-1945	78-1945-C	.490	.380				
	.3750	78-1950	78-1950-C	.490	.380				

STOCKED WITH ZRN COATING

ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.



KEY CUTTERS FOR SOFTER MATERIALS

-C = ZRN COATING FOR SERIES 78

ITI CARBIDE: SPECIALLY BLENDED FOR OPTIMUM PERFORMANCE

ITI Carbide Cutting Tools

KEY CUTTERS

SERIES 76 SOLID CARBIDE KEY CUTTERS

APPLICATION: CLEARANCE ANGLES FOR CUTTING STEEL

HEAD DIA +.000 / -.005	CUTTER WIDTH	ORDER EDP #	ALTIN COATED EDP #	NECK DIA	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	OVERALL LENGTH
3/32	.010	76-0795	76-0795-C	.046	.047	1/8	1/8	4	2”
	.015	76-0800	76-0800-C	.046	.047				
	.020	76-0802	76-0802-C	.046	.047				
	.025	76-0804	76-0804-C	.046	.047				
	.0312 (1/32)	76-0810	76-0810-C	.046	.047				
	.0394 (1 MM)	76-0812	76-0812-C	.046	.047				
	.0496 (3/64)	76-0815	76-0815-C	.046	.047				
	.0625 (1/16)	76-0820	76-0820-C	.046	.047				
1/8	.010	76-0825	76-0825-C	.060	.032	1/8	1/8	6	2”
	.015	76-0900	76-0900-C	.060	.032				
	.020	76-0902	76-0902-C	.060	.032				
	.025	76-0904	76-0904-C	.060	.032				
	.030	76-0906	76-0906-C	.060	.032				
	.0312 (1/32)	76-0910	76-0910-C	.060	.032				
	.035	76-0912	76-0912-C	.060	.032				
	.0394 (1 MM)	76-0914	76-0914-C	.060	.032				
	.0469 (3/64)	76-0920	76-0920-C	.060	.032				
	.050	76-0922	76-0922-C	.060	.032				
	.055	76-0924	76-0924-C	.060	.032				
	.0625 (1/16)	76-0926	76-0926-C	.060	.032				
	.0781 (5/64)	76-0928	76-0928-C	.060	.032				
	.0938 (3/32)	76-0930	76-0930-C	.060	.032				
5/32	.010	76-0932	76-0932-C	.078	.039	3/16	3/16	6	2-1/2”
	.015	76-0950	76-0950-C	.078	.039				
	.020	76-0952	76-0952-C	.078	.039				
	.025	76-0954	76-0954-C	.078	.039				
	.0312 (1/32)	76-0955	76-0955-C	.078	.039				
	.0394 (1 MM)	76-0957	76-0957-C	.078	.039				
	.0469 (3/64)	76-0960	76-0960-C	.078	.039				
	.0625 (1/16)	76-0962	76-0962-C	.078	.039				
	.0781 (5/64)	76-0963	76-0963-C	.078	.039				
	.0938 (3/32)	76-0964	76-0964-C	.078	.039				
3/16	.010	76-0965	76-0965-C	.094	.046	3/16	3/16	6	2-1/2”
	.015	76-1050	76-1050-C	.094	.046				
	.020	76-1052	76-1052-C	.094	.046				
	.030	76-1054	76-1054-C	.094	.046				
	.0312 (1/32)	76-1055	76-1055-C	.094	.046				
	.0394 (1 MM)	76-1057	76-1057-C	.094	.046				
	.040	76-1059	76-1059-C	.094	.046				
	.0469 (3/64)	76-1060	76-1060-C	.094	.046				
	.050	76-1062	76-1062-C	.094	.046				
	.0625 (1/16)	76-1065	76-1065-C	.094	.046				
	.0781 (5/64)	76-1067	76-1067-C	.094	.046				
	.0787 (2 MM)	76-1068	76-1068-C	.094	.046				
	.0934 (3/32)	76-1069	76-1069-C	.094	.046				
	.1250 (1/8)	76-1075	76-1075-C	.094	.046				
1/4	.010	76-1095	76-1095-C	.125	.062	1/4	1/4	6	2-1/2”
	.015	76-1100	76-1100-C	.125	.062				
	.018	76-1105	76-1105-C	.125	.062				
	.020	76-1110	76-1110-C	.125	.062				
	.023	76-1115	76-1115-C	.125	.062				
	.025	76-1120	76-1120-C	.125	.062				
	.028	76-1125	76-1125-C	.125	.062				
	.030	76-1130	76-1130-C	.125	.062				
	.0312 (1/32)	76-1135	76-1135-C	.125	.062				



ANY WIDTH REDUCED TO YOUR SPECIFICATIONS.
SPECIALS, CORNER RADIUS, STAGGER TOOTH AND LEFT HAND AVAILABLE.

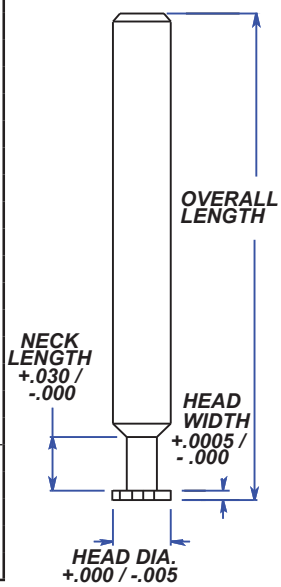
SERIES 76 SOLID CARBIDE KEY CUTTERS

APPLICATION: CLEARANCE ANGLES FOR CUTTING STEEL

HEAD DIA +.000 / -.005	CUTTER WIDTH	ORDER EDP #	ALTIN COATED EDP #	NECK DIA	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	OVERALL LENGTH
1/4 CONT.	.0350	76-1140	76-1140-C	.125	.062	1/4	1/4	6	2-1/2”
	.0380	76-1145	76-1145-C	.125	.062				
	.0394 (1 MM)	76-1147	76-1147-C	.125	.062				
	.0400	76-1150	76-1150-C	.125	.062				
	.0469 (3/64)	76-1151	76-1151-C	.125	.062				
	.0500	76-1153	76-1153-C	.125	.062				
	.0600	76-1154	76-1154-C	.125	.062				
	.0625 (1/16)	76-1155	76-1155-C	.125	.062				
	.0781 (5/64)	76-1157	76-1157-C	.125	.062				
	.0787 (2MM)	76-1158	76-1158-C	.125	.062				
	.0937 (3/32)	76-1159	76-1159-C	.125	.062				
5/16	.0150	76-1160	76-1160-C	.150	.081	5/16	5/16	8	2-1/2”
	.0200	76-1165	76-1165-C	.150	.081				
	.0312 (1/32)	76-1170	76-1170-C	.150	.081				
	.0394 (1MM)	76-1172	76-1172-C	.150	.081				
	.0469 (3/64)	76-1175	76-1175-C	.150	.081				
	.0625 (1/16)	76-1180	76-1180-C	.150	.081				
	.0781 (5/64)	76-1182	76-1182-C	.150	.081				
	.0787 (2MM)	76-1184	76-1184-C	.150	.081				
	.0938 (3/32)	76-1185	76-1185-C	.150	.081				
	.1250 (1/8)	76-1190	76-1190-C	.150	.081				
	.1562 (5/32)	76-1195	76-1195-C	.150	.081				
3/8	.010	76-1197	76-1197-C	.200	.087	3/8	3/8	8	2-1/2”
	.015	76-1198	76-1198-C	.200	.087				
	.020	76-1199	76-1199-C	.200	.087				
	.0312 (1/32)	76-1200	76-1200-C	.200	.087				
	.0394 (1MM)	76-1202	76-1202-C	.200	.087				
	.0469 (3/64)	76-1205	76-1205-C	.200	.087				
	.0625 (1/16)	76-1210	76-1210-C	.200	.087				
	.0781 (5/64)	76-1212	76-1212-C	.200	.087				
	.0787 (2MM)	76-1213	76-1213-C	.200	.087				
	.0938 (3/32)	76-1215	76-1215-C	.200	.087				
	.1250 (1/8)	76-1220	76-1220-C	.200	.087				
	.1562 (5/32)	76-1225	76-1225-C	.200	.087				
	.1875 (3/16)	76-1230	76-1230-C	.200	.087				
1/2	.015	76-1232	76-1232-C	.250	.125	3/8	1/2	10	3”
	.0312 (1/32)	76-1235	76-1235-C	.250	.125				
	.0394 (1MM)	76-1237	76-1237-C	.250	.125				
	.0468 (3/64)	76-1240	76-1240-C	.250	.125				
	.0625 (1/16)	76-1245	76-1245-C	.250	.125				
	.0781 (5/64)	76-1247	76-1247-C	.250	.125				
	.0787 (2MM)	76-1248	76-1248-C	.250	.125				
	.0938 (3/32)	76-1250	76-1250-C	.250	.125				
	.1181 (3MM)	76-1252	76-1252-C	.250	.125				
	.1250 (1/8)	76-1255	76-1255-C	.250	.125				
	.1406 (9/64)	76-1257	76-1257-C	.250	.125				
	.1562 (5/32)	76-1260	76-1260-C	.250	.125				
	.1575 (4MM)	76-1262	76-1262-C	.250	.125				
	.1875 (3/16)	76-1265	76-1265-C	.250	.125				
	.1969 (5MM)	76-1267	76-1267-C	.250	.125				
	.2344 (15/64)	76-1268	76-1268-C	.250	.125				
	.2362 (6MM)	76-1269	76-1269-C	.250	.125				
	.2500 (1/4)	76-1270	76-1270-C	.250	.125				
5/8	.0625 (1/16)	76-1280	76-1280-C	.300	.162	1/2	5/8	10	3-1/2”
	.0938 (3/32)	76-1290	76-1290-C	.300	.162				
	.1250 (1/8	76-1300	76-1300-C	.300	.162				
	.1875 (3/16)	76-1310	76-1310-C	.300	.162				
	.2500 (1/4)	76-1320	76-1320-C	.300	.162				



ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.

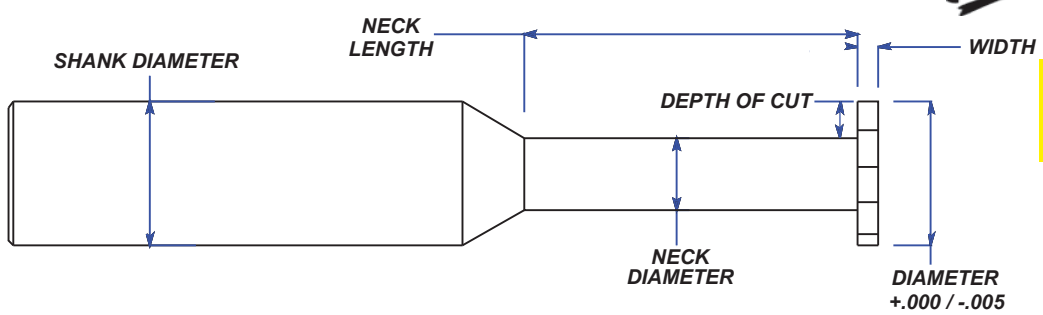


KEY CUTTERS

SERIES 83 SOLID CARBIDE LONG REACH KEY CUTTERS

APPLICATION: FOR SLOTTING ALL TYPES OF MATERIALS

New!



ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.

HEAD DIA	WIDTH	ORDER EDP #	ALTIN COATED EDP #	NECK DIA	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	OVERALL LENGTH
3/16	.0156 (1/64)	83-1000	83-1000-C	.093	.047	9/16	3/16	6	2-1/2”
	.0312 (1/32)	83-1010	83-1010-C	.093	.047				
	.0469 (3/64)	83-1020	83-1020-C	.093	.047				
	.0625 (1/16)	83-1030	83-1030-C	.093	.047				
	.0781 (5/64)	83-1040	83-1040-C	.093	.047				
	.0938 (3/32)	83-1050	83-1050-C	.093	.047				
	.1250 (1/8)	83-1060	83-1060-C	.093	.047				
1/4	.0156 (1/64)	83-1070	83-1070-C	.125	.062	3/4	1/4	6	2-1/2”
	.0312 (1/32)	83-1080	83-1080-C	.125	.062				
	.0469 (3/64)	83-1090	83-1090-C	.125	.062				
	.0625 (1/16)	83-1100	83-1100-C	.125	.062				
	.0781 (5/64)	83-1110	83-1110-C	.125	.062				
	.0938 (3/32)	83-1120	83-1120-C	.125	.062				
	.1250 (1/8)	83-1130	83-1130-C	.125	.062				
5/16	.0156 (1/64)	83-1140	83-1140-C	.156	.078	1”	5/16	8	2-1/2”
	.0312 (1/32)	83-1150	83-1150-C	.156	.078				
	.0469 (3/64)	83-1160	83-1160-C	.156	.078				
	.0625 (1/16)	83-1170	83-1170-C	.156	.078				
	.0781 (5/64)	83-1180	83-1180-C	.156	.078				
	.0938 (3/32)	83-1190	83-1190-C	.156	.078				
	.1250 (1/8)	83-1200	83-1200-C	.156	.078				
3/8	.0156 (1/64)	83-1210	83-1210-C	.187	.094	1-1/8	3/8	8	3”
	.0312 (1/32)	83-1220	83-1220-C	.187	.094				
	.0469 (3/64)	83-1230	83-1230-C	.187	.094				
	.0625 (1/16)	83-1240	83-1240-C	.187	.094				
	.0781 (5/64)	83-1250	83-1250-C	.187	.094				
	.0938 (3/32)	83-1260	83-1260-C	.187	.094				
	.1250 (1/8)	83-1270	83-1270-C	.187	.094				
1/2	.0156 (1/64)	83-1280	83-1280-C	.250	.125	1-1/2	1/2	10	3”
	.0312 (1/32)	83-1290	83-1290-C	.250	.125				
	.0469 (3/64)	83-1300	83-1300-C	.250	.125				
	.0625 (1/16)	83-1310	83-1310-C	.250	.125				
	.0781 (5/64)	83-1320	83-1320-C	.250	.125				
	.0938 (3/32)	83-1330	83-1330-C	.250	.125				
	.1250 (1/8)	83-1340	83-1340-C	.250	.125				
5/8	.0625 (1/16)	83-1350	83-1350-C	.300	.162	1-5/8	5/8	10	3-1/2”
	.0938 (3/32)	83-1360	83-1360-C	.300	.162				
	.1250 (1/8)	83-1370	83-1370-C	.300	.162				
	.1875 (3/16)	83-1380	83-1380-C	.300	.162				



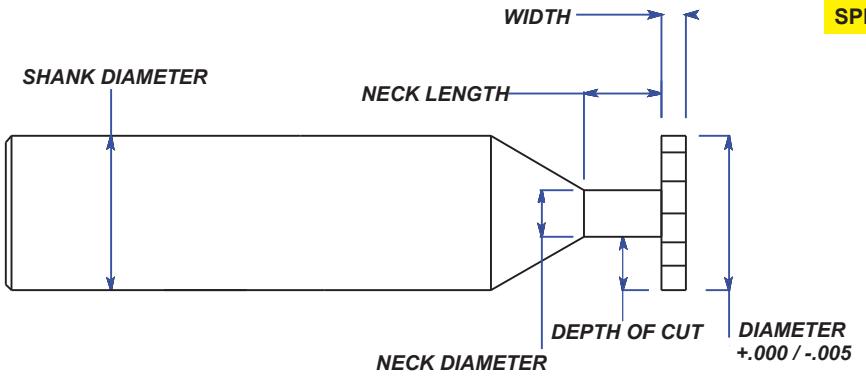
SERIES 57 DEEP SLOTTING KEY CUTTERS

APPLICATION : FOR CUTTING DEEP SLOTS

SOLID CARBIDE

ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.

New!





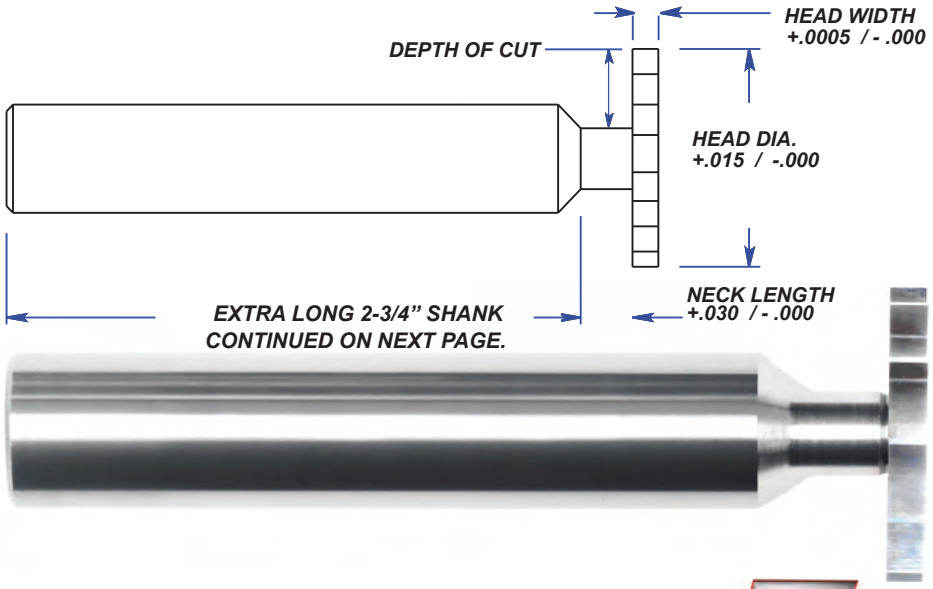
HEAD DIA	WIDTH	ORDER EDP #	ALTIN COATED EDP #	NECK DIA	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	OVERALL LENGTH
1/4	.0156 (1/64)	57-1000	57-1000-C	.070	.090	1/8	1/4	6	2-1/2”
	.0312 (1/32)	57-1010	57-1010-C	.070	.090				
	.0469 (3/64)	57-1020	57-1020-C	.070	.090				
	.0625 (1/16)	57-1030	57-1030-C	.070	.090				
	.0781 (5/64)	57-1040	57-1040-C	.070	.090				
	.0938 (3/32)	57-1050	57-1050-C	.070	.090				
	.1250 (1/8)	57-1060	57-1060-C	.070	.090				
5/16	.0156 (1/64)	57-1070	57-1070-C	.090	.110	1/8	5/16	8	2-1/2”
	.0312 (1/32)	57-1080	57-1080-C	.090	.110				
	.0469 (3/64)	57-1090	57-1090-C	.090	.110				
	.0625 (1/16)	57-1100	57-1100-C	.090	.110				
	.0781 (5/64)	57-1110	57-1110-C	.090	.110				
	.0938 (3/32)	57-1120	57-1120-C	.090	.110				
	.1250 (1/8)	57-1130	57-1130-C	.090	.110				
3/8	.0156 (1/64)	57-1140	57-1140-C	.120	.125	3/16	3/8	8	2-1/2”
	.0312 (1/32)	57-1150	57-1150-C	.120	.125				
	.0469 (3/64)	57-1160	57-1160-C	.120	.125				
	.0625 (1/16)	57-1170	57-1170-C	.120	.125				
	.0781 (5/64)	57-1180	57-1180-C	.120	.125				
	.0938 (3/32)	57-1190	57-1190-C	.120	.125				
	.1250 (1/8)	57-1200	57-1200-C	.120	.125				
1/2	.0156 (1/64)	57-1210	57-1210-C	.150	.175	1/4	1/2	10	3”
	.0312 (1/32)	57-1220	57-1220-C	.150	.175				
	.0469 (3/64)	57-1230	57-1230-C	.150	.175				
	.0625 (1/16)	57-1240	57-1240-C	.150	.175				
	.0781 (5/64)	57-1250	57-1250-C	.150	.175				
	.0938 (3/32)	57-1260	57-1260-C	.150	.175				
	.1250 (1/8)	57-1270	57-1270-C	.150	.175				
5/8	.0625 (1/16)	57-1280	57-1280-C	.180	.220	1/4	5/8	10	3-1/2”
	.0938 (3/32)	57-1290	57-1290-C	.180	.220				
	.1250 (1/8)	57-1300	57-1300-C	.180	.220				
	.1875 (3/16)	57-1310	57-1310-C	.180	.220				

KEY CUTTERS

SERIES 78 CARBIDE HEAD STEEL SHANK KEY CUTTERS

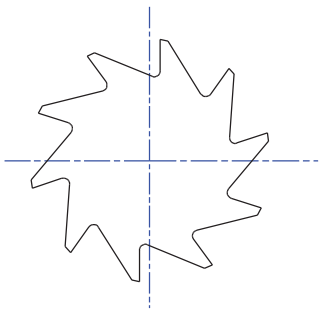
APPLICATION : FOR CUTTING SLOTS & KEYWAYS

HEAD DIA +.015/ -.000	WIDTH	STD.#	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	SHANK LENGTH
3/8	.0156 (1/64)		78-1090	78-1090-C	.200	.078	1/4	1/2	8	2-3/4”
	.0312 (1/32)		78-1095	78-1095-C	.200	.078	1/4			
	.0469 (3/64)		78-1100	78-1100-C	.200	.078	1/4			
	.0625 (1/16)		78-1105	78-1105-C	.200	.078	1/4			
	.0781 (5/64)		78-1106	78-1106-C	.200	.078	1/4			
	.0938 (3/32)		78-1110	78-1110-C	.200	.078	1/4			
	.1250 (1/8)		78-1115	78-1115-C	.200	.078	1/4			
7/16	.0312 (1/32)		78-1116	78-1116-C	.250	.093	1/4	1/2	8	2-3/4”
	.0625 (1/16)		78-1117	78-1117-C	.250	.093	1/4			
	.1250 (1/8)		78-1118	78-1118-C	.250	.093	1/4			
1/2	.0156 (1/64)		78-1119	78-1119-C	.250	.125	1/4	1/2	10	2-3/4”
	.0312 (1/32)		78-1120	78-1120-C	.250	.125	1/4			
	.0469 (3/64)		78-1125	78-1125-C	.250	.125	1/4			
	.0625 (1/16)	# 204	78-1130	78-1130-C	.135	.182	1/8			
	.0781 (5/64)		78-1135	78-1135-C	.250	.125	1/4			
	.0938 (3/32)	# 304	78-1140	78-1140-C	.165	.167	1/8			
	.1094 (7/64)		78-1145	78-1145-C	.250	.125	1/4			
	.1250 (1/8)	# 404	78-1150	78-1150-C	.190	.155	1/8			
	.1562 (5/32)		78-1155	78-1155-C	.250	.125	1/4			
9/16	.0312 (1/32)		78-1156	78-1156-C	.250	.156	1/4	1/2	10	2-3/4”
	.0625 (1/16)		78-1157	78-1157-C	.250	.156	1/4			
	.1250 (1/8)		78-1158	78-1158-C	.250	.156	1/4			
5/8	.0156 (1/64)		78-1159	78-1159-C	.280	.172	1/4	1/2	10	2-3/4”
	.0312 (1/32)		78-1160	78-1160-C	.280	.172	1/4			
	.0469 (3/64)		78-1165	78-1165-C	.280	.172	1/4			
	.0625 (1/16)		78-1170	78-1170-C	.280	.172	1/4			
	.0781 (5/64)		78-1175	78-1175-C	.280	.172	1/4			
	.0938 (3/32)	# 305	78-1180	78-1180-C	.195	.215	1/8			
	.1094 (7/64)		78-1185	78-1185-C	.280	.172	1/4			
	.1250 (1/8)	#405	78-1190	78-1190-C	.225	.200	1/4			
	.1406 (9/64)		78-1195	78-1195-C	.280	.172	1/4			
	.1562 (5/32)	#505	78-1200	78-1200-C	.250	.187	1/4			
	.1875 (3/16)	#605	78-1205	78-1205-C	.250	.187	1/4			
	.2031 (13/64)		78-1210	78-1210-C	.280	.172	1/4			
	.2188 (7/32)		78-1215	78-1215-C	.280	.172	1/4			
	.2500 (1/4)		78-1220	78-1220-C	.280	.172	1/4			
	.2812 (9/32)		78-1225	78-1225-C	.280	.172	1/4			
11/16	.0625 (1/16)		78-1226	78-1226-C	.280	.203	1/4	1/2	10	2-3/4”
	.1250 (1/8)		78-1227	78-1227-C	.280	.203	1/4			



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ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.



STANDARD TEETH

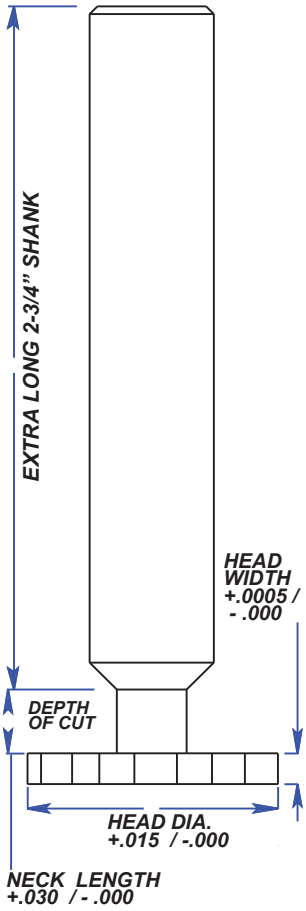
SERIES 78 CARBIDE HEAD STEEL SHANK KEY CUTTERS

KEY CUTTERS

APPLICATION : FOR CUTTING SLOTS & KEYWAYS

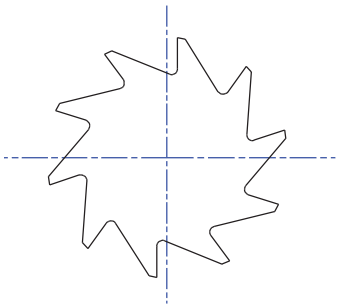
HEAD DIA +.015/ -.000	WIDTH	STD.#	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	SHANK LENGTH
3/4	.0312 (1/32)		78-1228	78-1228-C	.280	.235	1/4	1/2	10	2-3/4”
	.0469 (3/64)		78-1229	78-1229-C	.280	.235	1/4			
	.0625 (1/16)		78-1230	78-1230-C	.280	.235	1/4			
	.0781 (5/64)		78-1235	78-1235-C	.280	.235	1/4			
	.0938 (3/32)		78-1240	78-1240-C	.280	.235	1/4			
	.1094 (7/64)		78-1245	78-1245-C	.280	.235	1/4			
	.1250 (1/8)	#406	78-1250	78-1250-C	.230	.260	1/4			
	.1406 (9/64)		78-1255	78-1255-C	.280	.235	1/4			
	.1562 (5/32)	#506	78-1260	78-1260-C	.250	.250	1/4			
	.1875 (3/16)	#606	78-1265	78-1265-C	.280	.235	1/4			
	.2031 (13/64)		78-1270	78-1270-C	.280	.235	1/4			
	.2188 (7/32)		78-1275	78-1275-C	.280	.235	1/4			
	.2344 (15/64)		78-1280	78-1280-C	.280	.235	1/4			
	.2500 (1/4)	#806	78-1285	78-1285-C	.280	.235	1/4			
	.2656 (17/64)		78-1290	78-1290-C	.490	.130	1/4	1/2	10	2-1/2”
	.2812 (9/32)		78-1295	78-1295-C	.490	.130	1/4			
	.3125 (5/16)		78-1300	78-1300-C	.490	.130	1/4			
	.3438 (11/32)		78-1305	78-1305-C	.490	.130	1/4			
	.3750 (3/8)		78-1310	78-1310-C	.490	.130	1/4			
7/8	.0312 (1/32)		78-1311	78-1311-C	.280	.297	1/4	1/2	12	2-3/4”
	.0469 (3/64)		78-1312	78-1312-C	.280	.297	1/4			
	.0625 (1/16)		78-1313	78-1313-C	.280	.297	1/4			
	.0938 (3/32)		78-1314	78-1314-C	.280	.297	1/4			
	.1250 (1/8)		78-1315	78-1315-C	.280	.297	1/4			
	.1562 (5/32)	#507	78-1320	78-1320-C	.250	.312	1/4			
	.1875 (3/16)	#607	78-1325	78-1325-C	.280	.297	1/4			
	.2188 (7/32)	#707	78-1330	78-1330-C	.280	.297	1/4			
	.2500 (1/4)	#807	78-1335	78-1335-C	.345	.265	1/4	1/2	12	2-1/2”
	.3125 (5/16)		78-1340	78-1340-C	.490	.192	1/4			
	.3750 (3/8)		78-1345	78-1345-C	.490	.192	1/4			
1”	.0312 (1/32)		78-1346	78-1346-C	.280	.360	1/4	1/2	12	2-3/4”
	.0469 (3/64)		78-1348	78-1348-C	.280	.360	1/4			
	.0625 (1/16)		78-1350	78-1350-C	.280	.360	1/4			
	.0781 (5/64)		78-1352	78-1352-C	.280	.360	1/4			
	.0938 (3/32)		78-1355	78-1355-C	.280	.360	1/4			
	.1250 (1/8)		78-1360	78-1360-C	.280	.360	1/4			
	.1562 (5/32)		78-1362	78-1362-C	.280	.360	1/4			
	.1875 (3/16)	#608	78-1365	78-1365-C	.280	.360	1/4			
	.2188 (7/32)	#708	78-1370	78-1370-C	.340	.330	1/4	1/2	12	2-1/2”
	.2500 (1/4)	808	78-1375	78-1375-C	.345	.327	1/4			
	.2812 (9/32)		78-1380	78-1380-C	.490	.255	1/4			
	.3125 (5/16)	#1008	78-1385	78-1385-C	.400	.300	1/4			
	.3750 (3/8)	#1208	78-1390	78-1390-C	.400	.300	1/4			

ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.



CONTINUED ON NEXT PAGE.





STANDARD TEETH

QUALITY TOOLING MADE IN THE USA

Carbide Cutting Tools

KEY CUTTERS

SERIES 78 CARBIDE HEAD STEEL SHANK KEY CUTTERS

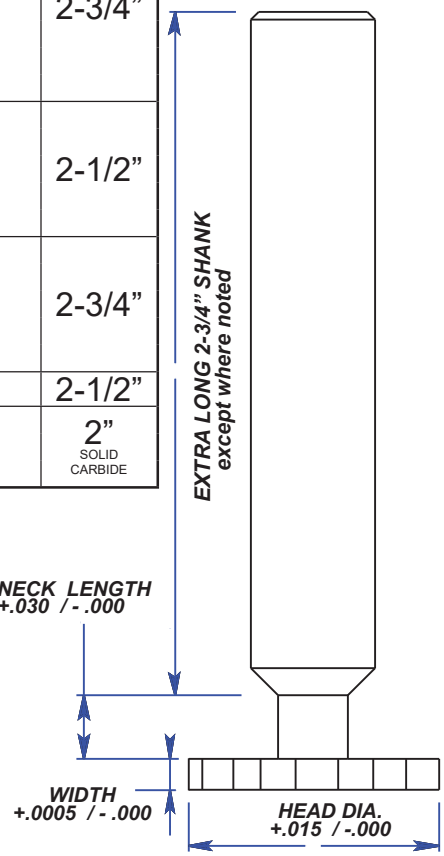
APPLICATION : FOR CUTTING SLOTS & KEYWAYS

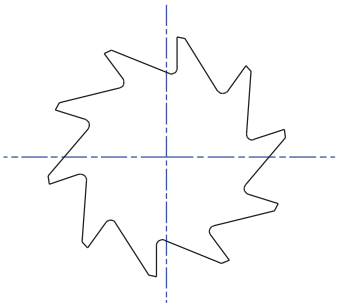
HEAD DIA +.015/ -.000	WIDTH	STD.#	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	SHANK LENGTH
1-1/8	.0625 (1/16)		78-1392	78-1392-C	.280	.422	1/4	1/2	12	2-3/4"
	.0938 (3/32)		78-1394	78-1394-C	.280	.422	1/4			
	.1250 (1/8)		78-1395	78-1395-C	.280	.422	1/4			
	.1875 (3/16)		78-1400	78-1400-C	.280	.422	1/4			
	.2188 (7/32)		78-1405	78-1405-C	.490	.317	1/4	1/2	12	2-1/2"
	.2500 (1/4)		78-1410	78-1410-C	.490	.317	1/4			
1-1/4	.0312 (1/32)		78-1412	78-1412-C	.280	.485	1/4	1/2	14	2-3/4"
	.0469 (3/64)		78-1413	78-1413-C	.280	.485	1/4			
	.0625 (1/16)		78-1415	78-1415-C	.280	.485	1/4			
	.0781 (5/64)		78-1417	78-1417-C	.280	.485	1/4			
	.0938 (3/32)		78-1420	78-1420-C	.280	.485	1/4			
	.1250 (1/8)		78-1425	78-1425-C	.280	.485	1/4			
	.1562 (5/32)		78-1427	78-1427-C	.280	.485	1/4			
	.1875 (3/16)	#610	78-1430	78-1430-C	.320	.930	1/4	1/2	14	2-1/2"
	.2188 (7/32)	#710	78-1435	78-1435-C	.380	.435	1/4			
	.2500 (1/4)	#810	78-1440	78-1440-C	.379	.435	1/4			
	.3125 (5/16)	#1010	78-1445	78-1445-C	.437	.406	1/4			
	.3750 (3/8)	#1210	78-1450	78-1450-C	.430	.410	1/4			
1-3/8	.0625 (1/16)		78-1555	78-1555-C	.280	.547	1/4	1/2	14	2-3/4"
	.0781 (5/64)		78-1557	78-1557-C	.280	.547	1/4			
	.0938 (3/32)		78-1560	78-1560-C	.280	.547	1/4			
	.1250 (1/8)		78-1565	78-1565-C	.280	.547	1/4			
	.1562 (5/32)		78-1570	78-1570-C	.280	.547	1/4			
	.1875 (3/16)		78-1572	78-1572-C	.490	.442	1/4	1/2	14	2-1/2"
	.2500 (1/4)	#811	78-1475	78-1475-C	.400	.487	1/4	1/2	14	2" SOLID CARBIDE
	.3125 (5/16)	#1011	78-1480	78-1480-C	.470	.452	1/4			
	.3750 (3/8)	#1211	78-1485	78-1485-C	.470	.452	1/4			

ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.

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STANDARD TEETH

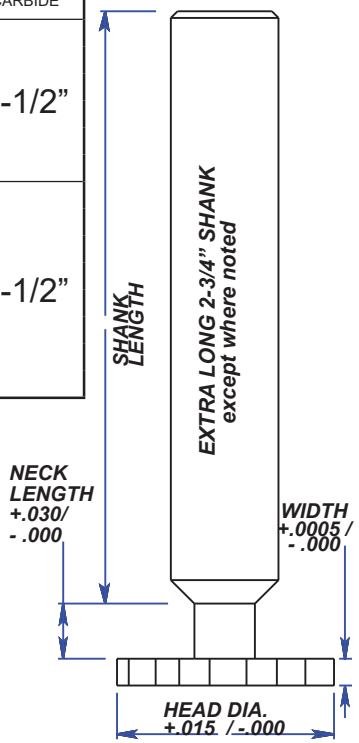
SERIES 78 CARBIDE HEAD STEEL SHANK KEY CUTTERS

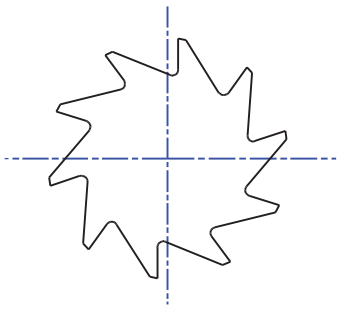
APPLICATION : FOR CUTTING SLOTS & KEYWAYS

HEAD DIA +.015/ -.000	WIDTH	STD.#	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	SHANK LENGTH
1-1/2	.0312 (1/32)		78-1452	78-1452-C	.280	.610	1/4	1/2	16	2-3/4”
	.0469 (3/64)		78-1453	78-1453-C	.280	.610	1/4			
	.0625 (1/16)		78-1455	78-1455-C	.280	.610	1/4			
	.0781 (5/64)		78-1457	78-1457-C	.280	.610	1/4			
	.0938 (3/32)		78-1460	78-1460-C	.280	.610	1/4			
	.1250 (1/8)		78-1465	78-1465-C	.280	.610	1/4			
	.1875 (3/16)		78-1470	78-1470-C	.490	.505	1/4	1/2	16	2-1/2”
	.2500 (1/4)	#812	78-1490	78-1490-C	.430	.535	1/4	1/2	16	2” SOLID CARBIDE
	.3125 (5/16)	#1012	78-1495	78-1495-C	.460	.520	1/4			
	.3750 (3/8)	#1212	78-1500	78-1500-C	.490	.505	1/4			
1-3/4	.0625 (1/16)		78-1505	78-1505-C	.490	.630	1/4	1/2	16	2-1/2”
	.0781 (5/64)		78-1507	78-1507-C	.490	.630	1/4			
	.0938 (3/32)		78-1508	78-1508-C	.490	.630	1/4			
	.1250 (1/8)		78-1510	78-1510-C	.490	.630	1/4			
	.1562 (5/32)		78-1512	78-1512-C	.490	.630	1/4			
	.1875 (3/16)		78-1515	78-1515-C	.490	.630	1/4			
2”	.0312 (1/32)		78-1517	78-1517-C	.490	.755	1/4	1/2	18	2-1/2”
	.0469 (3/64)		78-1519	78-1519-C	.490	.755	1/4			
	.0625 (1/16)		78-1520	78-1520-C	.490	.755	1/4			
	.0781 (5/64)		78-1522	78-1522-C	.490	.755	1/4			
	.0938 (3/32)		78-1523	78-1523-C	.490	.755	1/4			
	.1250 (1/8)		78-1525	78-1525-C	.490	.755	1/4			
	.1562 (5/32)		78-1527	78-1527-C	.490	.755	1/4			
	.1875 (3/16)		78-1530	78-1530-C	.490	.755	1/4			

ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.







STANDARD TEETH

UN-MATCHED TOOL VARIETY

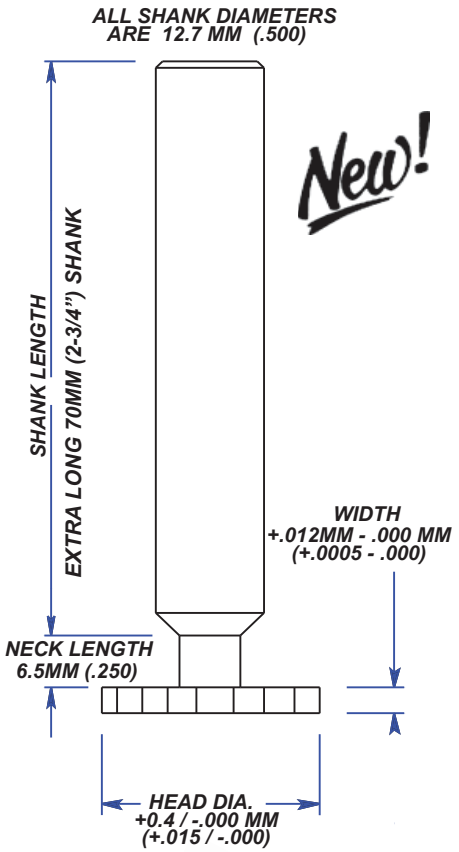
Carbide Cutting Tools

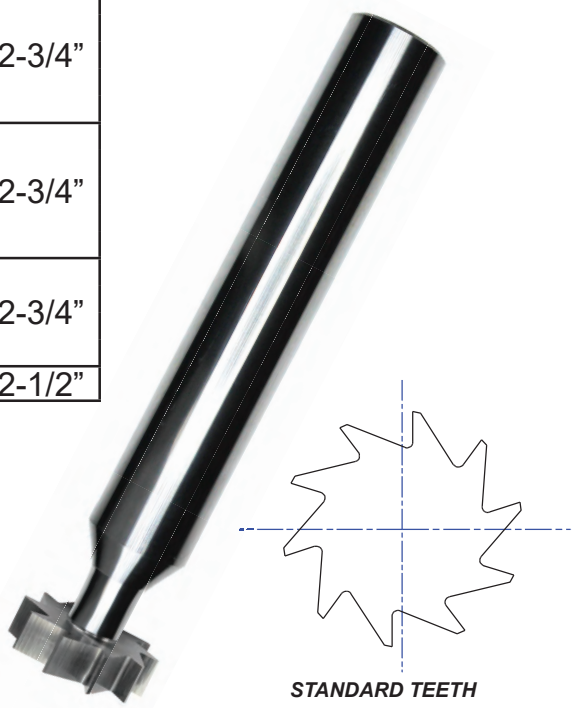
KEY CUTTERS

SERIES 79 METRIC CARBIDE HEAD STEEL SHANK KEY CUTTERS

APPLICATION : FOR CUTTING SLOTS & KEYWAYS

HEAD DIA +.015/ -.000	WIDTH	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	DEPTH OF CUT	# OF TEETH	SHANK LENGTH
10MM / .394	1.0 (.0394)	79-1800	79-1800-C	5MM /.196	2.5MM / .099	8	2-3/4”
	2.0 (.0787)	79-1805	79-1805-C	5MM /.196	2.5MM / .099		
	3.0 (.1181)	79-1810	79-1810-C	5MM /.196	2.5MM / .099		
12MM / .472	1.0 (.0394)	79-1815	79-1815-C	5MM /.196	3.5MM / .138	8	2-3/4”
	2.0 (.0787)	79-1820	79-1820-C	5MM /.196	3.5MM / .138		
	3.0 (.1181)	79-1825	79-1825-C	5MM /.196	3.5MM / .138		
14MM / .551	1.0 (.0394)	79-1830	79-1830-C	6MM /.236	3.9MM / .157	10	2-3/4”
	2.0 (.0787)	79-1835	79-1835-C	6MM /.236	3.9MM / .157		
	3.0 (.1181)	79-1840	79-1840-C	6MM /.236	3.9MM / .157		
	4.0 (.1575)	79-1845	79-1845-C	6MM /.236	3.9MM / .157		
16MM / .629	1.0 (.0394)	79-1850	79-1850-C	7MM /.275	4.4MM / .177	10	2-3/4”
	2.0 (.0787)	79-1855	79-1855-C	7MM /.275	4.4MM / .177		
	3.0 (.1181)	79-1860	79-1860-C	7MM /.275	4.4MM / .177		
	4.0 (.1575)	79-1865	79-1865-C	7MM /.275	4.4MM / .177		
18MM / .708	1.0 (.0394)	79-1870	79-1870-C	7MM /.275	5.4MM / .216	10	2-3/4”
	2.0 (.0787)	79-1875	79-1875-C	7MM /.275	5.4MM / .216		
	3.0 (.1181)	79-1880	79-1880-C	7MM /.275	5.4MM / .216		
	4.0 (.1575)	79-1885	79-1885-C	7MM /.275	5.4MM / .216		
	5.0 (.1969)	79-1890	79-1890-C	7MM /.275	5.4MM / .216		
20MM (.787)	1.0 (.0394)	79-1895	79-1895-C	7MM /.275	6.5MM / .256	10	2-3/4”
	2.0 (.0787)	79-1900	79-1900-C	7MM /.275	6.5MM / .256		
	3.0 (.1181)	79-1905	79-1905-C	7MM /.275	6.5MM / .256		
	4.0 (.1575)	79-1910	79-1910-C	7MM /.275	6.5MM / .256		
	5.0 (.1969)	79-1915	79-1915-C	7MM /.275	6.5MM / .256		
24MM / .944	1.0 (.0394)	79-1920	79-1920-C	7MM /.275	8.4MM / .334	12	2-3/4”
	2.0 (.0787)	79-1925	79-1925-C	7MM /.275	8.4MM / .334		
	3.0 (.1181)	79-1930	79-1930-C	7MM /.275	8.4MM / .334		
	4.0 (.1575)	79-1935	79-1935-C	7MM /.275	8.4MM / .334		
	5.0 (.1969)	79-1940	79-1940-C	7MM /.275	8.4MM / .334		
30MM / 1.182	1.0 (.0394)	79-1945	79-1945-C	7MM /.275	11.5MM / .453	12	2-3/4”
	2.0 (.0787)	79-1950	79-1950-C	7MM /.275	11.5MM / .453		
	3.0 (.1181)	79-1955	79-1955-C	7MM /.275	11.5MM / .453		
	4.0 (.1575)	79-1960	79-1960-C	7MM /.275	11.5MM / .453		
	5.0 (.1969)	79-1965	79-1965-C	7MM /.275	11.5MM / .453		
32MM / 1.260	1.0 (.0394)	79-1970	79-1970-C	7MM /.275	12.4MM / .492	14	2-3/4”
	2.0 (.0787)	79-1975	79-1975-C	7MM /.275	12.4MM / .492		
	3.0 (.1181)	79-1980	79-1980-C	7MM /.275	12.4MM / .492		
	4.0 (.1575)	79-1985	79-1985-C	7MM /.275	12.4MM / .492		
	5.0 (.1969)	79-1990	79-1990-C	7MM /.275	12.4MM / .492		
38MM / 1.497	1.0 (.0394)	79-1995	79-1995-C	7MM /.275	16.5MM / .611	16	2-3/4”
	2.0 (.0787)	79-2000	79-2000-C	7MM /.275	16.5MM / .611		
	3.0 (.1181)	79-2005	79-2005-C	7MM /.275	16.5MM / .611		
	4.0 (.1575)	79-2010	79-2010-C	7MM /.275	16.5MM / .611		
	5.0 (.1969)	79-2015	79-2015-C	12MM / .490	12.7MM / .503	16	2-1/2”





ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.
SPECIALS, CORNER RADIUS, STAGGER TOOTH AND LEFT HAND ARE AVAILABLE ON REQUEST.

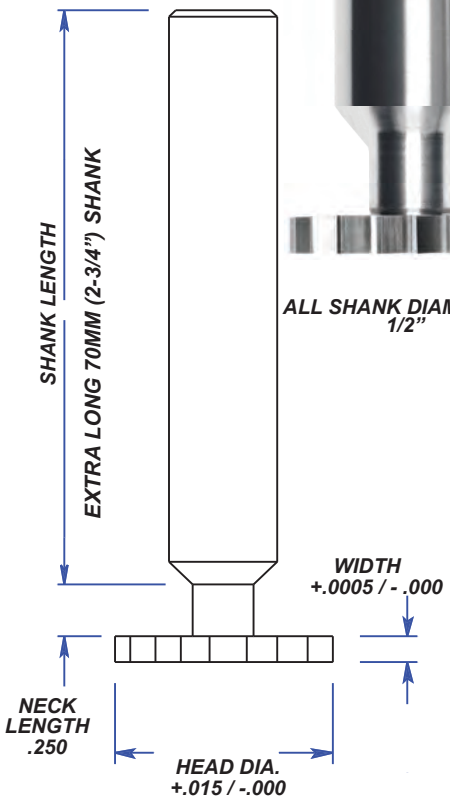
SERIES 107 FINE TOOTH CARBIDE HEAD STEEL SHANK KEY CUTTERS

APPLICATION: USED ON HARDER MATERIALS AND WHEN CUTTING INTERRUPTED CUTS

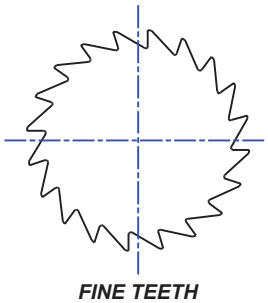
New!

HEAD DIA +.015/ -.000	WIDTH	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	DEPTH OF CUT	# OF TEETH	SHANK LENGTH
1/2	.0312 (1/32)	107-1000	107-1000-C	.250	.125	14	2-3/4"
	.0625 (1/16)	107-1010	107-1010-C	.250	.125		
	.0938 (3/32)	107-1020	107-1020-C	.250	.125		
	.1250 (1/8)	107-1030	107-1030-C	.250	.125		
5/8	.0312 (1/32)	107-1040	107-1040-C	.280	.172	16	2-3/4"
	.0625 (1/16)	107-1050	107-1050-C	.280	.172		
	.0938 (3/32)	107-1060	107-1060-C	.280	.172		
	.1250 (1/8)	107-1070	107-1070-C	.280	.172		
3/4	.0312 (1/32)	107-1080	107-1080-C	.280	.235	20	2-3/4"
	.0625 (1/16)	107-1090	107-1090-C	.280	.235		
	.0938 (3/32)	107-1100	107-1100-C	.280	.235		
	.1250 (1/8)	107-1110	107-1110-C	.280	.235		
	.1875 (3/16)	107-1120	107-1120-C	.280	.235		
	.2500 (1/4)	107-1130	107-1130-C	.280	.235		
7/8	.0625 (1/16)	107-1140	107-1140-C	.280	.297	22	2-3/4"
	.0938 (3/32)	107-1150	107-1150-C	.280	.297		
	.1250 (1/8)	107-1160	107-1160-C	.280	.297		
	.1875 (3/16)	107-1170	107-1170-C	.280	.297		
1	.0312 (1/32)	107-1180	107-1180-C	.280	.360	24	2-3/4"
	.0625 (1/16)	107-1190	107-1190-C	.280	.360		
	.0938 (3/32)	107-1200	107-1200-C	.280	.360		
	.1250 (1/8)	107-1210	107-1210-C	.280	.360		
	.1875 (3/16)	107-1220	107-1220-C	.280	.360		
	.2500 (1/4)	107-1230	107-1230-C	.280	.360		
1-1/8	.0625 (1/16)	107-1240	107-1240-C	.280	.422	28	2-3/4"
	.0938 (3/32)	107-1250	107-1250-C	.280	.422		
	.1250 (1/8)	107-1260	107-1260-C	.280	.422		
	.1875 (3/16)	107-1270	107-1270-C	.280	.422		
1-1/4	.0625 (1/16)	107-1280	107-1280-C	.280	.485	30	2-3/4"
	.0938 (3/32)	107-1290	107-1290-C	.280	.485		
	.1250 (1/8)	107-1300	107-1300-C	.280	.485		
	.1562 (5/32)	107-1310	107-1310-C	.280	.485		
	.1875 (3/16)	107-1320	107-1320-C	.490	.380	30	2-1/2"
	.2500 (1/4)	107-1330	107-1330-C	.490	.380		
1-1/2	.0625 (1/16)	107-1340	107-1340-C	.280	.610	36	2-3/4"
	.0938 (3/32)	107-1350	107-1350-C	.280	.610		
	.1250 (1/8)	107-1360	107-1360-C	.280	.610		
	.1562 (5/32)	107-1370	107-1370-C	.490	.505	36	2-1/2"
	.1875 (3/16)	107-1380	107-1380-C	.490	.505		





ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.



FINE TEETH

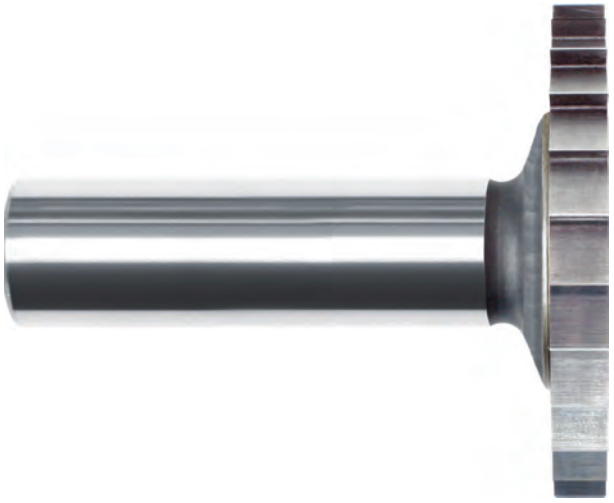
KEY CUTTERS

SERIES 23 LARGE DIAMETER CARBIDE HEAD STEEL SHANK KEY CUTTERS

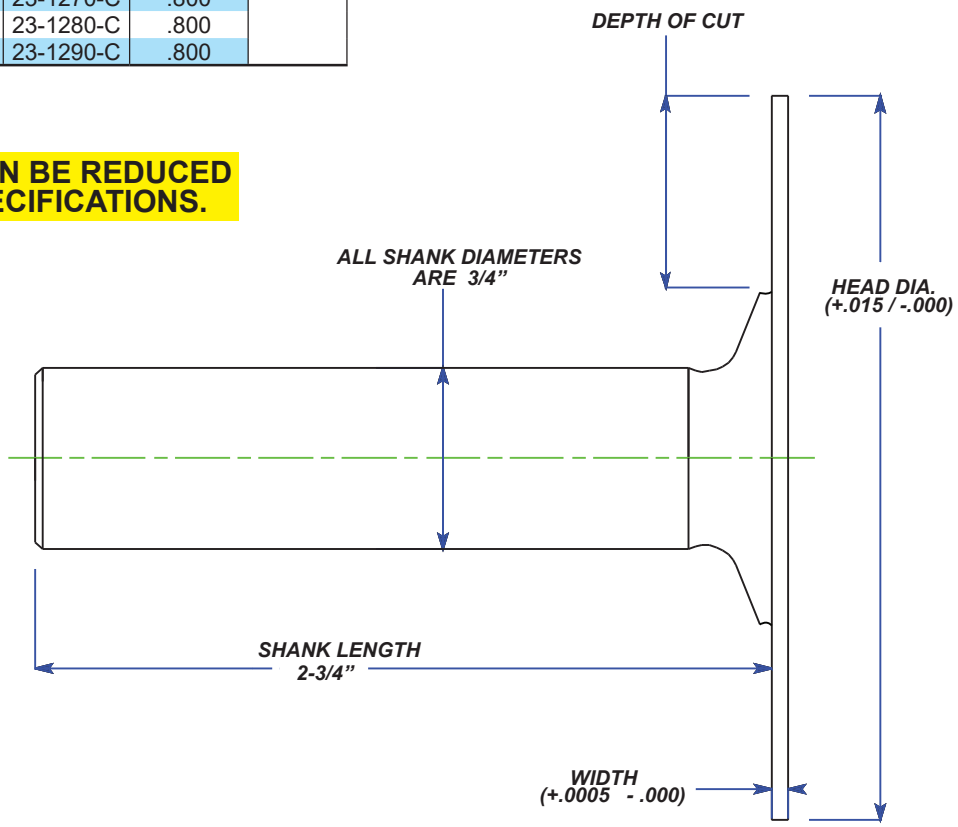
APPLICATION : FOR CUTTING SLOTS & KEYWAYS

HEAD DIA	WIDTH	ORDER EDP #	ALTIN COATED EDP #	DEPTH OF CUT	# OF TEETH
2”	.0312 (1/32)	23-1000	23-1000-C	.550	24
	.0625 (1/16)	23-1010	23-1010-C	.550	
	.0938 (3/32)	23-1020	23-1020-C	.550	
	.1250 (1/8)	23-1030	23-1030-C	.550	
	.1875 (3/16)	23-1040	23-1040-C	.550	
	.2500 (1/4)	23-1050	23-1050-C	.550	
2-1/4”	.0312 (1/32)	23-1060	23-1060-C	.600	28
	.0625 (1/16)	23-1070	23-1070-C	.600	
	.0938 (3/32)	23-1080	23-1080-C	.600	
	.1250 (1/8)	23-1090	23-1090-C	.600	
	.1875 (3/16)	23-1100	23-1100-C	.600	
	.2500 (1/4)	23-1110	23-1110-C	.600	
2-1/2”	.0312 (1/32)	23-1120	23-1120-C	.550	28
	.0625 (1/16)	23-1130	23-1130-C	.550	
	.0938 (3/32)	23-1140	23-1140-C	.550	
	.1250 (1/8)	23-1150	23-1150-C	.550	
	.1875 (3/16)	23-1160	23-1160-C	.550	
	.2500 (1/4)	23-1170	23-1170-C	.550	
2-3/4”	.0312 (1/32)	23-1180	23-1180-C	.650	30
	.0625 (1/16)	23-1190	23-1190-C	.650	
	.0938 (3/32)	23-1200	23-1200-C	.650	
	.1250 (1/8)	23-1210	23-1210-C	.650	
	.1875 (3/16)	23-1220	23-1220-C	.650	
	.2500 (1/4)	23-1230	23-1230-C	.650	
3”	.0312 (1/32)	23-1240	23-1240-C	.800	30
	.0625 (1/16)	23-1250	23-1250-C	.800	
	.0938 (3/32)	23-1260	23-1260-C	.800	
	.1250 (1/8)	23-1270	23-1270-C	.800	
	.1875 (3/16)	23-1280	23-1280-C	.800	
	.2500 (1/4)	23-1290	23-1290-C	.800	

New!



ANY WIDTH CAN BE REDUCED TO YOUR SPECIFICATIONS.



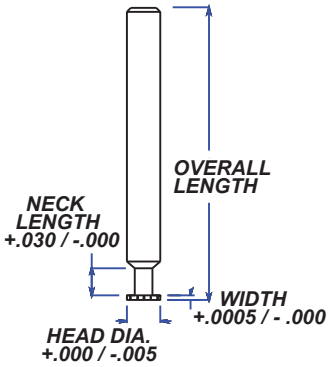
SPECIALIZING IN UNIQUE AND HARD TO FIND CUTTING TOOLS

Carbide Cutting Tools

SERIES 77 RETAINING RING CARBIDE KEY CUTTERS

APPLICATION: ALL CLEARANCE ANGLES, RAKE ANGLES AND DISH CLEARANCE'S ARE SPECIFICALLY ENGINEERED AND DESIGNED FOR CUTTING RETAINING RING GROOVES

HEAD DIA	WIDTH	NECK DIA	NECK LENGTH	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	DEPTH OF CUT	# OF TEETH	OVERALL LENGTH
3/16	.018	.094	3/16	77-1900	77-1900-C	3/16	.046	6	2-1/2"
	.029	.125	3/16	77-1910	77-1910-C	3/16	.031		
1/4	.039	.125	1/4	77-1920	77-1920-C	1/4	.062	6	2-1/2"
	.046	.125	1/4	77-1930	77-1930-C	1/4	.062		
5/16	.056	.150	5/16	77-1940	77-1940-C	5/16	.081	8	2-1/2"
3/8	.068	.200	3/8	77-1950	77-1950-C	3/8	.087	8	2-1/2"
	.086	.200	3/8	77-1960	77-1960-C	3/8	.087		
1/2	.103	.250	3/8	77-1970	77-1970-C	1/2	.125	10	3"
	.120	.250	3/8	77-1980	77-1980-C	1/2	.125		



SERIES 74 LONG SHANK SOLID CARBIDE KEY CUTTERS

HEAD DIA	WIDTH	NECK DIA	NECK LENGTH	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	DEPTH OF CUT	# OF TEETH	OVERALL LENGTH
3/16	.0469	.094	1/4	74-0100	74-0100-C	3/16	.046	6	4"
	.0938	.094	1/4	74-0105	74-0105-C	3/16	.046		
1/4	.0625	.125	3/8	74-0110	74-0110-C	1/4	.062	6	4"
	.1250	.125	3/8	74-0115	74-0115-C	1/4	.062		
5/16	.0625	.150	1/2	74-0120	74-0120-C	5/16	.081	8	4"
	.1250	.150	1/2	74-0125	74-0125-C	5/16	.081		
3/8	.0625	.200	5/8	74-0130	74-0130-C	3/8	.087	8	4"
	.1250	.200	5/8	74-0135	74-0135-C	3/8	.087		
1/2	.0625	.250	3/4	74-0140	74-0140-C	1/2	.125	10	6"
	.1250	.250	3/4	74-0145	74-0145-C	1/2	.125		

New!



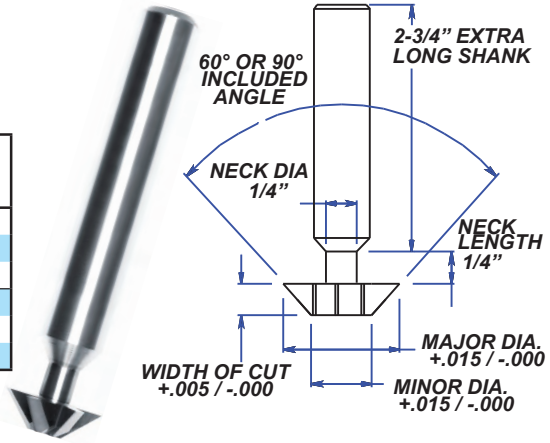
SERIES 74 LONG SHANK CARBIDE HEAD KEY CUTTERS

New!

HEAD DIA	WIDTH	NECK DIA	NECK LENGTH	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	DEPTH OF CUT	# OF TEETH	OVERALL LENGTH
5/8	.0625	.280	1/4	74-0200	74-0200-C	1/2	.172	10	6"
	.1250	.280	1/4	74-0205	74-0205-C	1/2	.172		
3/4	.0625	.250	1/4	74-0210	74-0210-C	1/2	.250	10	6"
	.1250	.250	1/4	74-0215	74-0215-C	1/2	.250		
7/8	.0625	.280	1/4	74-0220	74-0220-C	1/2	.297	12	6"
	.1250	.280	1/4	74-0225	74-0225-C	1/2	.297		
1"	.0625	.280	1/4	74-0230	74-0230-C	1/2	.360	12	6"
	.1250	.280	1/4	74-0235	74-0235-C	1/2	.360		
1-1/4	.0625	.280	1/4	74-0240	74-0240-C	1/2	.485	14	6"
	.1250	.280	1/4	74-0245	74-0245-C	1/2	.485		

SERIES 90 SINGLE ANGLE CUTTERS

INCLUDED ANGLE	MAJOR DIA	MINOR DIA	WIDTH OF CUT	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	# OF TEETH
60°	1/2	.356	.125	90-1100	90-1100-C	SA-500-60	4
	5/8	.408	.187	90-1105	90-1105-C	SA-625-60	6
	3/4	.461	.250	90-1110	90-1110-C	SA-750-60	6
90°	1/2	.250	.125	90-1115	90-1115-C	SA-500-90	4
	5/8	.250	.187	90-1120	90-1120-C	SA-625-90	6
	3/4	.250	.250	90-1125	90-1125-C	SA-750-90	6



OVER 6000 TOOLS NOW AVAILABLE

Carbide Cutting Tools

KEY CUTTERS

SERIES 76 CARBIDE 1/4" SHANK KEY CUTTERS

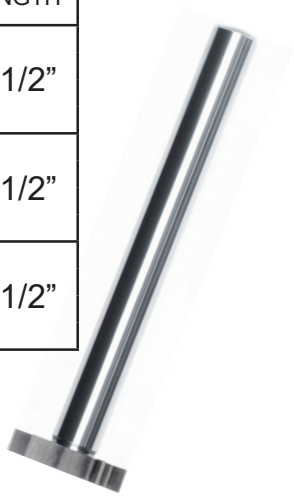
APPLICATION: DESIGNED TO BE USED IN SMALL MILLS OR AS LIVE TOOLING

New!

SOLID CARBIDE

HEAD DIA +.010/-.000	WIDTH	NECK DIA	NECK LENGTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	SHANK DIA	DEPTH OF CUT	# OF TEETH	SHANK LENGTH
3/8	.0312	.200	1/4	76-9000	76-9000-C	SC-375-031	1/4	.875	8	2-1/2"
	.0625	.200	1/4	76-9010	76-9010-C	SC-375-063	1/4	.875		
	.0938	.200	1/4	76-9015	76-9015-C	SC-375-094	1/4	.875		
	.1250	.200	1/4	76-9020	76-9020-C	SC-375-125	1/4	.875		
1/2	.0312	.240	1/4	76-9025	76-9025-C	SC-500-031	1/4	.135	10	2-1/2"
	.0625	.240	1/4	76-9030	76-9030-C	SC-500-063	1/4	.135		
	.0938	.240	1/4	76-9035	76-9035-C	SC-500-094	1/4	.135		
	.1250	.240	1/4	76-9040	76-9040-C	SC-500-125	1/4	.135		
5/8	.0312	.240	1/4	76-9045	76-9045-C	SC-625-031	1/4	.185	10	2-1/2"
	.0625	.240	1/4	76-9050	76-9050-C	SC-625-063	1/4	.185		
	.0938	.240	1/4	76-9055	76-9055-C	SC-625-094	1/4	.185		
	.1250	.240	1/4	76-9060	76-9060-C	SC-625-125	1/4	.185		

SPECIAL WIDTHS, CORNER RADIUS, STAGGER TOOTH AND LEFT HAND ARE AVAILABLE ON REQUEST.



SERIES 78 CARBIDE HEAD 3/8 STEEL SHANK KEY CUTTERS

HEAD DIA +.015/-.000	WIDTH	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	DEPTH OF CUT	NECK LENGTH	SHANK DIA	# OF TEETH	SHANK LENGTH
1/2	.0312	78-0870	78-0870-C	.250	.125	1/4	3/8	10	2-3/4"
	.0469	78-0875	78-0875-C	.250	.125				
	.0625	78-0880	78-0880-C	.250	.125				
	.0781	78-0885	78-0885-C	.250	.125				
	.0938	78-0890	78-0890-C	.250	.125				
	.1250	78-0895	78-0895-C	.250	.125				
	.1562	78-0897	78-0897-C	.250	.125				
5/8	.0312	78-0900	78-0900-C	.250	.187	1/4	3/8	10	2-3/4"
	.0469	78-0902	78-0902-C	.250	.187				
	.0625	78-0905	78-0905-C	.250	.187				
	.0781	78-0907	78-0907-C	.250	.187				
	.0938	78-0910	78-0910-C	.250	.187				
	.1250	78-0915	78-0915-C	.250	.187				
	.1562	78-0917	78-0917-C	.250	.187				
	.1875	78-0918	78-0918-C	.250	.187				
3/4	.0312	78-0920	78-0920-C	.250	.250	1/4	3/8	10	2-3/4"
	.0469	78-0922	78-0922-C	.250	.250				
	.0625	78-0925	78-0925-C	.250	.250				
	.0781	78-0927	78-0927-C	.250	.250				
	.0938	78-0930	78-0930-C	.250	.250				
	.1250	78-0935	78-0935-C	.250	.250				
	.1562	78-0937	78-0937-C	.250	.250				
	.1875	78-0939	78-0939-C	.250	.250				
1"	.0312	78-0945	78-0945-C	.250	.375	1/4	3/8	12	2-3/4"
	.0469	78-0950	78-0950-C	.250	.375				
	.0625	78-0955	78-0955-C	.250	.375				
	.0781	78-0960	78-0960-C	.250	.375				
	.0938	78-0965	78-0965-C	.250	.375				
	.1250	78-0970	78-0970-C	.250	.375				

SPECIAL WIDTHS ARE AVAILABLE ON REQUEST.

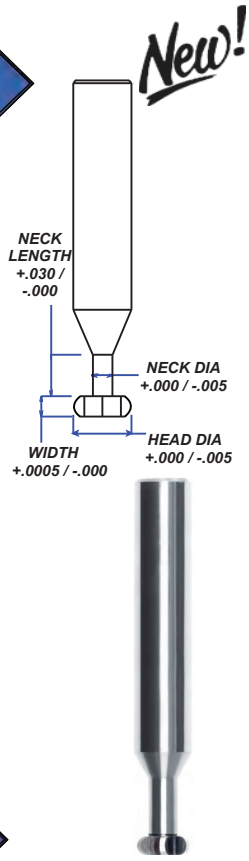


SERIES 80 FULL RADIUS KEY CUTTER

APPLICATION: FOR FULL RADIUS SLOTS

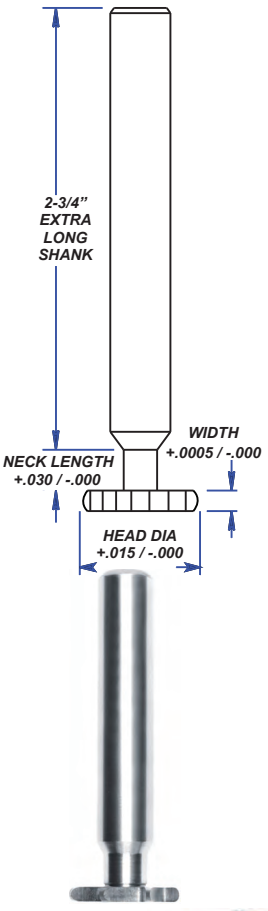
SOLID CARBIDE FULL RADIUS

HEAD DIA	WIDTH	RADIUS SIZE	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	O.A.L.
3/16	.0312 (1/32)	.0156	80-5000	80-5000-C	.094	.046	3/16	3/16	4	2-1/2”
	.0469 (3/64)	.0234	80-5010	80-5010-C	.094	.046				
	.0625 (1/16)	.0312	80-5020	80-5020-C	.094	.046				
1/4	.0312 (1/32)	.0156	80-5030	80-5030-C	.125	.062	1/4	1/4	5	2-1/2”
	.0469 (3/64)	.0234	80-5040	80-5040-C	.125	.062				
	.0625 (1/16)	.0312	80-5050	80-5050-C	.125	.062				
	.0781 (5/64)	.0390	80-5060	80-5060-C	.125	.062				
	.0938 (3/32)	.0469	80-5070	80-5070-C	.125	.062				
5/16	.0312 (1/32)	.0156	80-5080	80-5080-C	.150	.081	5/16	5/16	6	2-1/2”
	.0469 (3/64)	.0234	80-5090	80-5090-C	.150	.081				
	.0625 (1/16)	.0312	80-6000	80-6000-C	.150	.081				
	.0781 (5/64)	.0390	80-6010	80-6010-C	.150	.081				
	.0938 (3/32)	.0469	80-6020	80-6020-C	.150	.081				
	.1250 (1/8)	.0625	80-6030	80-6030-C	.150	.081				
3/8	.0312 (1/32)	.0156	80-6040	80-6040-C	.200	.087	3/8	3/8	6	2-1/2”
	.0469 (3/64)	.0234	80-6050	80-6050-C	.200	.087				
	.0625 (1/16)	.0312	80-6060	80-6060-C	.200	.087				
	.0938 (3/32)	.0469	80-6070	80-6070-C	.200	.087				
	.1250 (1/8)	.0625	80-6080	80-6080-C	.200	.087				
1/2	.0625 (1/16)	.0312	80-6090	80-6090-C	.250	.125	3/8	1/2	6	3”
	.0938 (3/32)	.0469	80-7000	80-7000-C	.250	.125				
	.1250 (1/8)	.0625	80-7010	80-7010-C	.250	.125				



CARBIDE HEAD ON HARDENED STEEL SHANK FULL RADIUS

HEAD DIA	WIDTH	RADIUS SIZE	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	O.A.L.
1/2	.0312 (1/32)	.0156	80-1090	80-1090-C	.250	.125	1/4	1/2	6	2-3/4”
	.0469 (3/64)	.0234	80-1095	80-1095-C	.250	.125				
	.0625 (1/16)	.0312	80-1100	80-1100-C	.250	.125				
	.0781 (5/64)	.0395	80-1104	80-1104-C	.250	.125				
	.0938 (3/32)	.0469	80-1105	80-1105-C	.250	.125				
	.1250 (1/8)	.0625	80-1110	80-1110-C	.250	.125				
5/8	.0312 (1/32)	.0156	80-1112	80-1112-C	.280	.172	1/4	1/2	6	2-3/4”
	.0469 (3/64)	.0234	80-1114	80-1114-C	.280	.172				
	.0625 (1/16)	.0312	80-1115	80-1115-C	.280	.172				
	.0781 (5/64)	.0395	80-1117	80-1117-C	.280	.172				
	.0938 (3/32)	.0469	80-1120	80-1120-C	.280	.172				
	.1250 (1/8)	.0625	80-1125	80-1125-C	.280	.172				
3/4	.0312 (1/32)	.0156	80-1127	80-1127-C	.280	.235	1/4	1/2	8	2-3/4”
	.0469 (3/64)	.0234	80-1128	80-1128-C	.280	.235				
	.0625 (1/16)	.0312	80-1130	80-1130-C	.280	.235				
	.0781 (5/64)	.0395	80-1132	80-1132-C	.280	.235				
	.0938 (3/32)	.0469	80-1135	80-1135-C	.280	.235				
	.1250 (1/8)	.0625	80-1140	80-1140-C	.280	.235				
1”	.0312 (1/32)	.0156	80-1142	80-1142-C	.280	.360	1/4	1/2	8	2-3/4”
	.0469 (3/64)	.0234	80-1144	80-1144-C	.280	.360				
	.0625 (1/16)	.0312	80-1145	80-1145-C	.280	.360				
	.0938 (3/32)	.0469	80-1150	80-1150-C	.280	.360				
	.1250 (1/8)	.0625	80-1155	80-1155-C	.280	.360				
1-1/4	.0625 (1/16)	.0312	80-1160	80-1160-C	.280	.485	1/4	1/2	10	2-3/4”
	.0938 (3/32)	.0469	80-1165	80-1165-C	.280	.485				
	.1250 (1/8)	.0625	80-1170	80-1170-C	.280	.485				
1-1/2	.0625 (1/16)	.0312	80-1180	80-1180-C	.280	.610	1/4	1/2	10	2-3/4”
	.0938 (3/32)	.0469	80-1185	80-1185-C	.280	.610				
	.1250 (1/8)	.0625	80-1190	80-1190-C	.280	.610				



SPECIAL WIDTHS ARE AVAILABLE ON REQUEST.

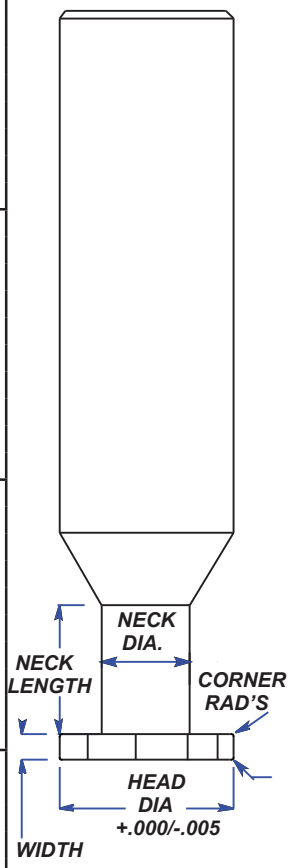
THEIR SPECIAL IS OUR STANDARD

KEY CUTTERS

SERIES 101 SOLID CARBIDE CORNER RADIUS KEY CUTTERS

APPLICATION : FOR CUTTING SLOTS & KEYWAYS

HEAD DIA	WIDTH	RADIUS SIZE	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	O.A.L.
1/4	.0625	.005	101-1000	101-1000-C	.125	.062	1/4	1/4	6	2-1/2”
		.010	101-1020	101-1020-C	.125	.062				
		.015	101-1030	101-1030-C	.125	.062				
	.0938	.005	101-1040	101-1040-C	.125	.062				
		.010	101-1050	101-1050-C	.125	.062				
		.015	101-1060	101-1060-C	.125	.062				
	.1250	.005	101-1070	101-1070-C	.125	.062				
		.010	101-1080	101-1080-C	.125	.062				
		.015	101-1090	101-1090-C	.125	.062				
		.030	101-1100	101-1100-C	.125	.062				
5/16	.0625	.005	101-1110	101-1110-C	.150	.081	5/16	5/16	8	2-1/2”
		.010	101-1120	101-1120-C	.150	.081				
		.015	101-1130	101-1130-C	.150	.081				
	.0938	.005	101-1140	101-1140-C	.150	.081				
		.010	101-1150	101-1150-C	.150	.081				
		.015	101-1160	101-1160-C	.150	.081				
	.1250	.005	101-1170	101-1170-C	.150	.081				
		.010	101-1180	101-1180-C	.150	.081				
		.015	101-1190	101-1190-C	.150	.081				
		.030	101-1200	101-1200-C	.150	.081				
3/8	.0625	.005	101-1210	101-1210-C	.200	.087	3/8	3/8	8	2-1/2”
		.010	101-1220	101-1220-C	.200	.087				
		.015	101-1230	101-1230-C	.200	.087				
	.0938	.005	101-1240	101-1240-C	.200	.087				
		.010	101-1250	101-1250-C	.200	.087				
		.015	101-1260	101-1260-C	.200	.087				
	.1250	.005	101-1270	101-1270-C	.200	.087				
		.010	101-1280	101-1280-C	.200	.087				
		.015	101-1290	101-1290-C	.200	.087				
		.030	101-1300	101-1300-C	.200	.087				
1/2	.0625	.005	101-1310	101-1310-C	.250	.125	3/8	1/2	10	3”
		.010	101-1320	101-1320-C	.250	.125				
		.015	101-1330	101-1330-C	.250	.125				
	.0938	.005	101-1340	101-1340-C	.250	.125				
		.010	101-1350	101-1350-C	.250	.125				
		.015	101-1360	101-1360-C	.250	.125				
	.1250	.005	101-1370	101-1370-C	.250	.125				
		.010	101-1380	101-1380-C	.250	.125				
		.015	101-1390	101-1390-C	.250	.125				
		.030	101-1400	101-1400-C	.250	.125				
	.250	.005	101-1410	101-1410-C	.250	.125				
		.010	101-1420	101-1420-C	.250	.125				
		.015	101-1430	101-1430-C	.250	.125				
		.030	101-1440	101-1440-C	.250	.125				



SPECIAL WIDTHS ARE AVAILABLE ON REQUEST.



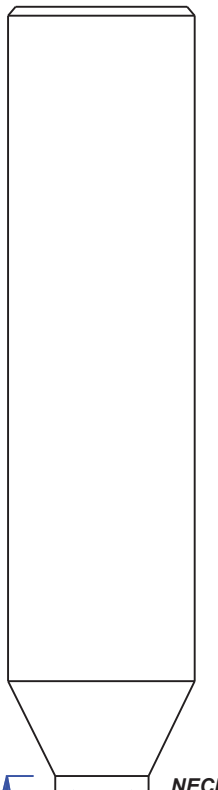
SERIES 102 CARBIDE HEAD STEEL SHANK CORNER RADIUS KEY CUTTERS

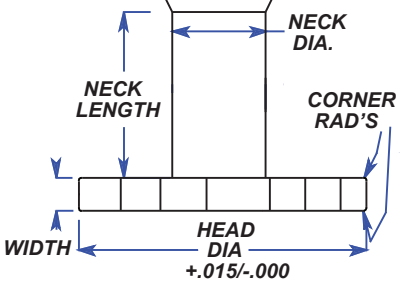
KEY CUTTERS

APPLICATION : FOR CUTTING SLOTS & KEYWAYS

HEAD DIA	WIDTH	RADIUS SIZE	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	DEPTH OF CUT	NECK LENGTH	SHANK DIA.	# OF TEETH	O.A.L.
5/8	.0625	.005	102-1000	102-1000-C	.280	.172	1/4	1/2	10	2-3/4
		.010	102-1020	102-1020-C	.280	.172				
		.015	102-1030	102-1030-C	.280	.172				
	.0938	.005	102-1040	102-1040-C	.280	.172				
		.010	102-1050	102-1050-C	.280	.172				
		.015	102-1060	102-1060-C	.280	.172				
	.1250	.005	102-1070	102-1070-C	.280	.172				
		.010	102-1080	102-1080-C	.280	.172				
		.015	102-1090	102-1090-C	.280	.172				
		.030	102-1100	102-1100-C	.280	.172				
3/4	.0625	.005	102-1110	102-1110-C	.280	.235	1/4	1/2	10	2-3/4
		.010	102-1120	102-1120-C	.280	.235				
		.015	102-1130	102-1130-C	.280	.235				
	.0938	.005	102-1140	102-1140-C	.280	.235				
		.010	102-1150	102-1150-C	.280	.235				
		.015	102-1160	102-1160-C	.280	.235				
	.125	.005	102-1170	102-1170-C	.280	.235				
		.010	102-1180	102-1180-C	.280	.235				
		.015	102-1190	102-1190-C	.280	.235				
		.030	102-1200	102-1200-C	.280	.235				
1”	.0625	.005	102-1210	102-1210-C	.280	.360	1/4	1/2	12	2-3/4
		.010	102-1220	102-1220-C	.280	.360				
		.015	102-1230	102-1230-C	.280	.360				
	.0938	.005	102-1240	102-1240-C	.280	.360				
		.010	102-1250	102-1250-C	.280	.360				
		.015	102-1260	102-1260-C	.280	.360				
	.1250	.005	102-1270	102-1270-C	.280	.360				
		.010	102-1280	102-1280-C	.280	.360				
		.015	102-1290	102-1290-C	.280	.360				
		.030	102-1300	102-1300-C	.280	.360				
1-1/4	.0625	.005	102-1310	102-1310-C	.280	.485	1/4	1/2	14	2-3/4
		.010	102-1320	102-1320-C	.280	.485				
		.015	102-1330	102-1330-C	.280	.485				
	.0938	.005	102-1340	102-1340-C	.280	.485				
		.010	102-1350	102-1350-C	.280	.485				
		.015	102-1360	102-1360-C	.280	.485				
	.1250	.005	102-1370	102-1370-C	.280	.485				
		.010	102-1380	102-1380-C	.280	.485				
		.015	102-1390	102-1390-C	.280	.485				
		.030	102-1400	102-1400-C	.280	.485				
	.250	.005	102-1410	102-1410-C	.380	.435	1/4	1/2	14	2-1/2
		.010	102-1420	102-1420-C	.380	.435				
		.015	102-1430	102-1430-C	.380	.435				
		.030	102-1440	102-1440-C	.380	.435				

New!





SPECIAL WIDTHS ARE AVAILABLE ON REQUEST.



KEY CUTTERS

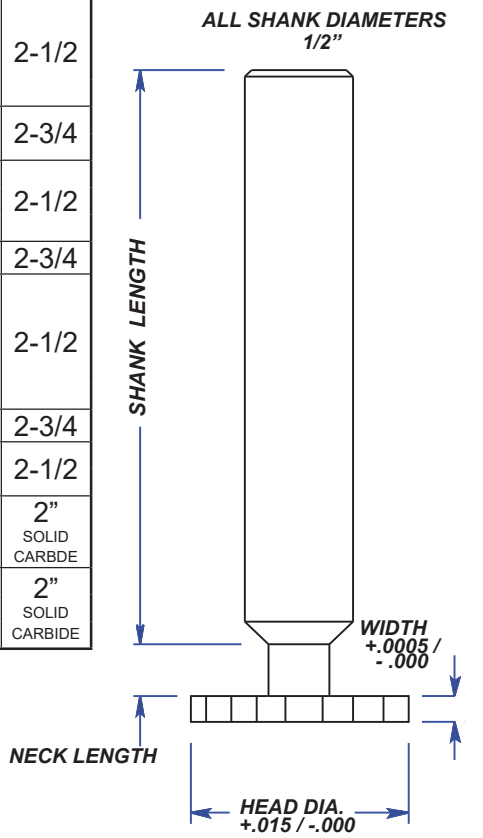
SERIES 103 STAGGERED TOOTH CARBIDE HEAD STEEL SHANK KEY CUTTERS

APPLICATION : FOR CUTTING SLOTS & KEYWAYS

HEAD DIA	WIDTH	STD #	ORDER EDP #	ALTIN COATED EDP #	NECK DIA.	NECK LENGTH	DEPTH OF CUT	# OF TEETH	O.A.L.
1/2	.0625	#204	103-1000	103-1000-C	.135	1/8	.182	8	2-3/4
	.0938	#304	103-1010	103-1010-C	.165	1/8	.167		
	.1250	#404	103-1020	103-1020-C	.190	1/8	.155		
5/8	.0938	#305	103-1030	103-1030-C	.195	1/8	.215	8	2-3/4
	.1250	#405	103-1040	103-1040-C	.225	1/4	.200		
	.1562	#505	103-1050	103-1050-C	.250	1/4	.187		
	.1875	#605	103-1060	103-1060-C	.250	1/4	.187		
	.2500		103-1070	103-1070-C	.280	1/4	.172		
3/4	.1250	#406	103-1080	103-1080-C	.230	1/4	.260	8	2-3/4
	.1562	#506	103-1090	103-1090-C	.250	1/4	.250		
	.1875	#606	103-1100	103-1100-C	.280	1/4	.235		
	.2500	#806	103-1110	103-1110-C	.280	1/4	.235		
	.3125		103-1120	103-1120-C	.490	1/4	.130	8	2-1/2
7/8	.1250		103-1130	103-1130-C	.280	1/4	.297	10	2-3/4
	.1562	#507	103-1140	103-1140-C	.250	1/4	.312		
	.1875	#607	103-1150	103-1150-C	.280	1/4	.297		
	.2188	#707	103-1160	103-1160-C	.280	1/4	.297		
	.2500	#807	103-1170	103-1170-C	.345	1/4	.265	10	2-1/2
	.3125		103-1180	103-1180-C	.490	1/4	.192		
	.3750		103-1190	103-1190-C	.490	1/4	.192		
1	.1250		103-1200	103-1200-C	.280	1/4	.360	10	2-3/4
	.1875	#608	103-1210	103-1210-C	.280	1/4	.360		
	.2188	#708	103-1220	103-1220-C	.340	1/4	.330	10	2-1/2
	.2500	#808	103-1230	103-1230-C	.345	1/4	.327		
	.3125	#1008	103-1240	103-1240-C	.400	1/4	.300		
	.3750	#1208	103-1250	103-1250-C	.400	1/4	.300		
1-1/8	.1250		103-1260	103-1260-C	.280	1/4	.422	10	2-3/4
	.1875	#609	103-1270	103-1270-C	.280	1/4	.422		
	.2500		103-1280	103-1280-C	.490	1/4	.317	10	2-1/2
	.3125		103-1290	103-1290-C	.490	1/4	.317		
	.3750		103-1300	103-1300-C	.490	1/4	.317		
1-1/4	.1250		103-1310	103-1310-C	.280	1/4	.485	12	2-3/4
	.1875	#610	103-1320	103-1320-C	.320	1/4	.465	12	2-1/2
	.2188	#710	103-1330	103-1330-C	.380	1/4	.435		
	.2500	#810	103-1340	103-1340-C	.437	1/4	.406		
	.3125	#1010	103-1350	103-1350-C	.435	1/4	.407		
	.3750	#1210	103-1360	103-1360-C	.430	1/4	.410		
1-3/8	.1250		103-1370	103-1370-C	.280	1/4	.547	12	2-3/4
	.1875		103-1380	103-1380-C	.400	1/4	.487	12	2-1/2
	.2500	#811	103-1390	103-1390-C	.400	1/4	.487		
	.3125	#1011	103-1400	103-1400-C	.470	1/4	.452	12	2" SOLID CARBDE
	.3750	#1211	103-1410	103-1410-C	.470	1/4	.452		
1-1/2	.2500	#812	103-1420	103-1420-C	.430	1/4	.535	14	2" SOLID CARBIDE
	.3125	#1012	103-1430	103-1430-C	.460	1/4	.520		
	.3750	#1212	103-1440	103-1440-C	.490	1/4	.505		

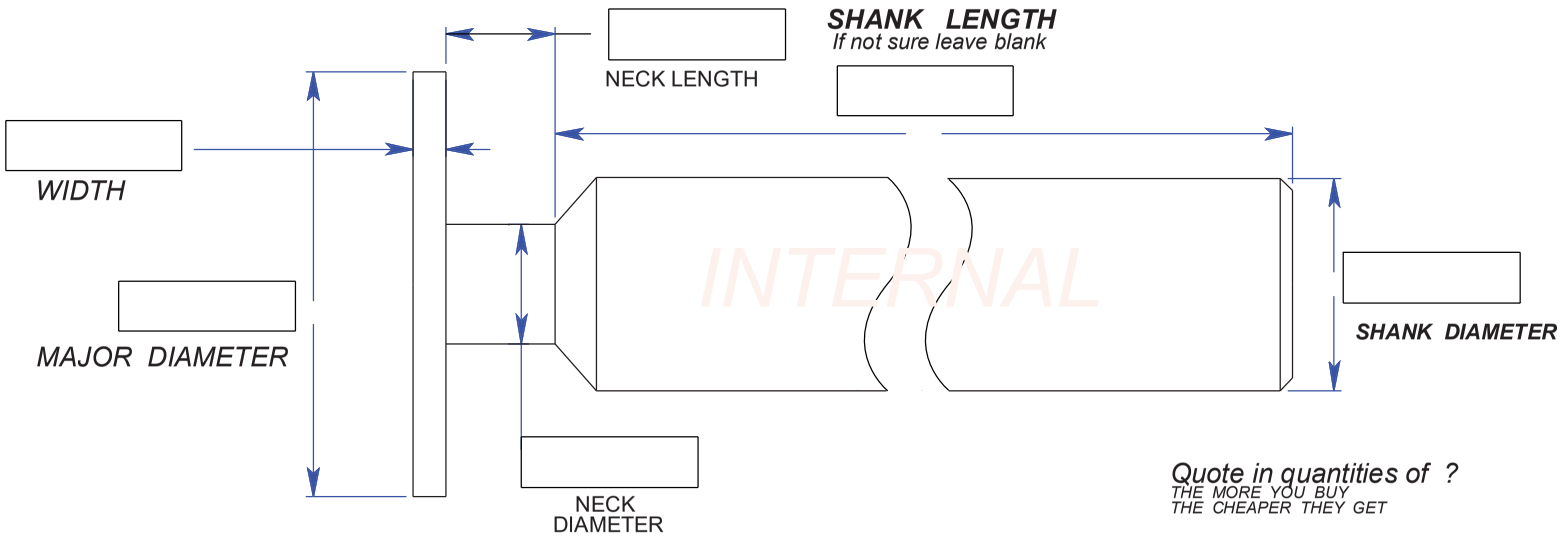
SPECIAL WIDTHS ARE AVAILABLE ON REQUEST.



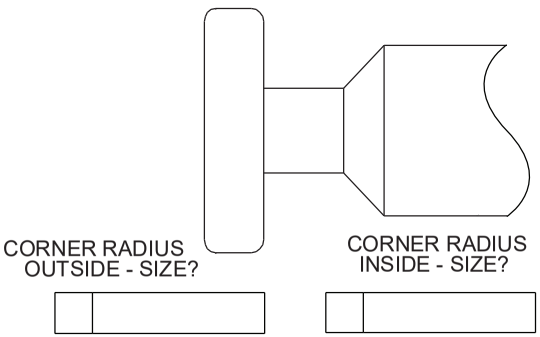


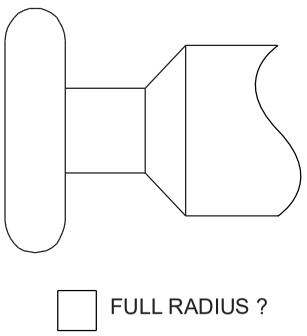
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we will quote as soon as possable. *INFO@generalcuttingtools.com*
Any dimension you're not sure of leave blank we will quote standard.

REVISIONS:		



Quote in quantities of ?
THE MORE YOU BUY
THE CHEAPER THEY GET





FULL RADIUS ?

QUANITY: _____

_____

YOUR COMPANY NAME: _____

CONTACT : _____

PHONE: _____

FAX: _____

YOUR DISTRIBUTOR: _____

INTERNAL TOOL

DRAWN BY:	DATE:	REV:
TOOL NUMBER:		

TOLERANCE UNLESS OTHERWISE SPECIFIED
.X = +/- 1/32
.XX = +/- .010
.XXX = +/- .002
.XXXX = /-.0005
ANGLES +/- 0.15

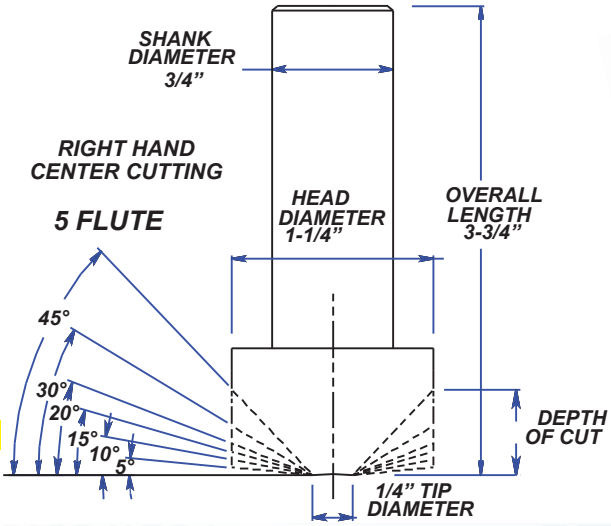
SERIES 81 ANGLERS

APPLICATION: MILLING ANGLES

CARBIDE HEAD ON HARDENED STEEL SHANK

ANGLE PER SIDE	ORDER EDP #	DEPTH OF CUT
5°	81-1050	.044
10°	81-1060	.088
15°	81-1070	.134
20°	81-1080	.182
30°	81-1090	.289
45°	81-1100	.500

SPECIAL ANGLES AVAILABLE ON REQUEST

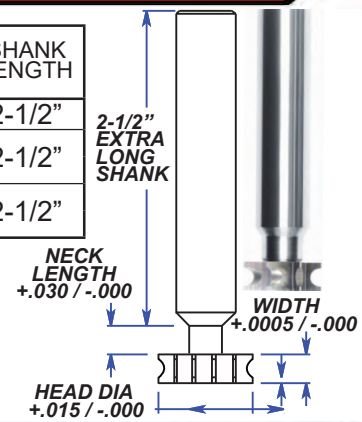




SERIES 82 CONCAVE RADIUS KEY CUTTERS

APPLICATION: CONCAVE RADIUS WORK

HEAD DIA	RADIUS SIZE	HEAD WIDTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	NECK DIA.	NECK LENGTH	SHANK DIA.	# OF TEETH	SHANK LENGTH
1/2	.031	3/16	82-1100	82-1100-C	CO-500-031	.280	1/4	1/2	6	2-1/2"
5/8	.046	7/32	82-1120	82-1120-C	CO-625-046	.280	1/4	1/2	6	2-1/2"
	.062	1/4	82-1130	82-1130-C	CO-625-062					
3/4	.093	5/16	82-1140	82-1140-C	CO-750-094	.380	1/4	1/2	8	2-1/2"
	.125	3/8	82-1150	82-1150-C	CO-750-125					

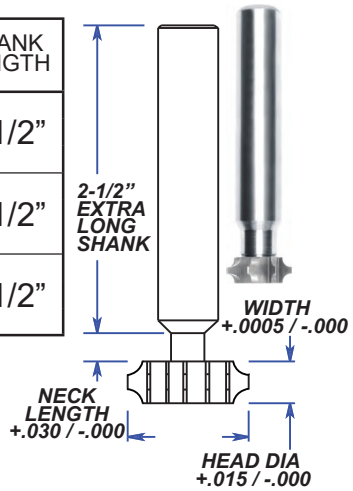


SERIES 84 DOUBLE CONCAVE RADIUS CUTTERS

APPLICATION: CONCAVE RADIUS WORK

HEAD DIA.	RADIUS SIZE	HEAD WIDTH	ORDER EDP #	ALTIN COATED EDP #	TOOL ID #	NECK DIA.	NECK LENGTH	SHANK DIA	# OF TEETH	SHANK LENGTH
1/2	.010	.115	84-1100	84-1100-C	DR-500-010	.250	1/4	1/2	6	2-1/2"
	.015	.125	84-1105	84-1105-C	DR-500-015					
	.020	.135	84-1110	84-1110-C	DR-500-020					
5/8	.031	.155	84-1115	84-1115-C	DR-625-031	.280	1/4	1/2	6	2-1/2"
	.046	.185	84-1120	84-1120-C	DR-625-046					
	.062	.215	84-1125	84-1125-C	DR-625-062					
3/4	.080	.255	84-1130	84-1130-C	DR-750-080	.380	1/4	1/2	8	2-1/2"
	.093	.280	84-1135	84-1135-C	DR-750-094					
	.125	.345	84-1140	84-1140-C	DR-750-125					

SPECIAL SIZES AVAILABLE ON REQUEST



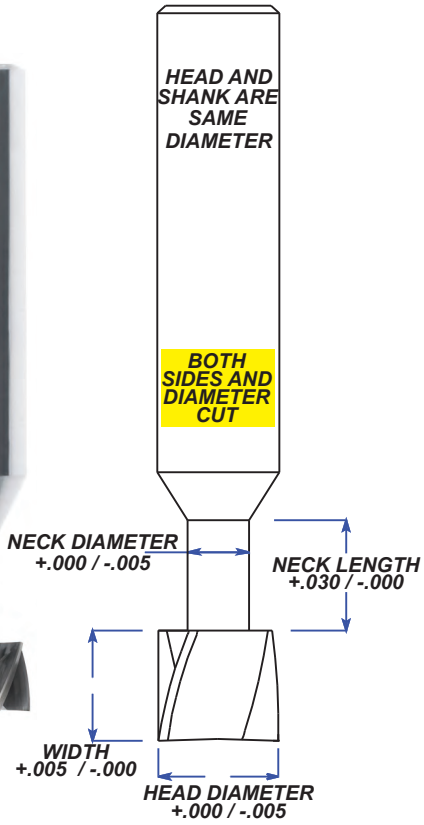
SERIES 106 PUSH-PULL SOLID CARBIDE CUTTERS

CARBIDE CUTTERS

APPLICATION: CUTS ON BOTH SIDES AND DIAMETER

HEAD DIA	WIDTH	ORDER EDP #	ALTIN COATED EDP#	NECK DIA	NECK LENGTH	# OF TEETH	OVERALL LENGTH
1/2	.250	106-1000	106-1000-C	.250	1/2	4	4”
	.375	106-1020	106-1020-C				
	.500	106-1040	106-1040-C				
	.625	106-1060	106-1060-C				
	.750	106-1080	106-1080-C				
5/8	.250	106-1100	106-1100-C	.312	1/2	4	4”
	.375	106-1120	106-1120-C				
	.500	106-1140	106-1140-C				
	.625	106-1160	106-1160-C				
	.750	106-1180	106-1180-C				
3/4	.250	106-1200	106-1200-C	.375	3/4	4	4”
	.375	106-1220	106-1220-C				
	.500	106-1240	106-1240-C				
	.625	106-1260	106-1260-C				
	.750	106-1280	106-1280-C				
1”	.250	106-1300	106-1300-C	.500	3/4	6	6”
	.375	106-1320	106-1320-C				
	.500	106-1340	106-1340-C				
	.625	106-1360	106-1360-C				
	.750	106-1380	106-1380-C				
	1.00	106-1400	106-1400-C				



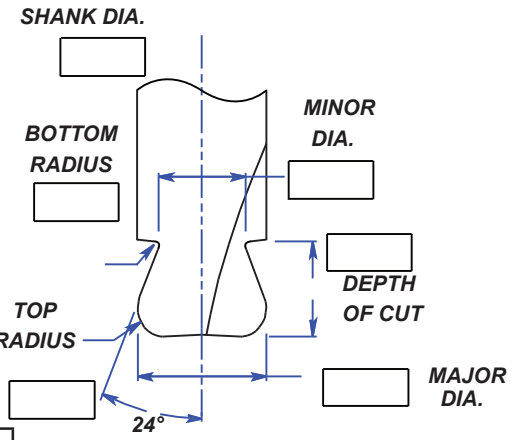


SERIES 51 O-RING DOVETAIL CUTTERS

APPLICATION: USED TO CUT-MILL 24° O-RING DOVETAILS. THEY CUT WITH BOTH TOP & BOTTOM RADIUS.

O-RING SIZE	MINOR DIA	MAJOR DIA	ORDER EDP #	DEPTH OF CUT	BOTTUM RADIUS	TOP RADIUS	SHANK LENGTH & DIA
.070	.062	.086	51-8000	.051	.005	.015	3/16 x 2.5
.093	.086	.126	51-8005	.075	.010	.015	3/16 x 2.5
.103	.094	.140	51-8010	.082	.010	.015	3/16 x 2.5
.125	.130	.177	51-8015	.102	.010	.031	1/4 x 2.5
.139	.125	.180	51-8020	.112	.010	.031	1/4 x 2.5
.187	.190	.279	51-8025	.154	.015	.031	5/16 x 2.5
.210	.189	.293	51-8030	.172	.015	.031	5/16 x 2.5
.250	.250	.356	51-8035	.212	.015	.062	3/8 x 2.5
.275	.244	.369	51-8040	.232	.015	.062	3/8 x 2.5
.375	.338	.497	51-8045	.317	.020	.094	1/2 x 3.0





PARKER-HANNIFIN STYLE

DIMENSIONS ARE METRIC

O-RING SIZE	MINOR DIA	MAJOR DIA	ORDER EDP #	DEPTH OF CUT	BOTTUM RADIUS	TOP RADIUS	SHANK LENGTH & DIA
1.78	1.40	1.79	51-2000	1.25	.211	.508	3/16 x 2.5
2.62	2.10	3.22	51-2010	2.05	.203	.508	3/16 x 2.5
3.53	2.85	4.28	51-2020	2.80	.254	.787	1/4 x 2.5
5.33	4.35	7.33	51-2030	4.55	.254	.787	5/16 x 2.5
6.99	5.85	9.04	51-2040	5.85	.254	1.60	3/8 x 2.5

TURNING STYLE O'RING TOOLS ARE ON PAGE 27

NEED A SPECIAL SIZE ?
MAKE A COPY, FILL IN THE INFORMATION, AND EMAIL IT TO US FOR A QUOTE .

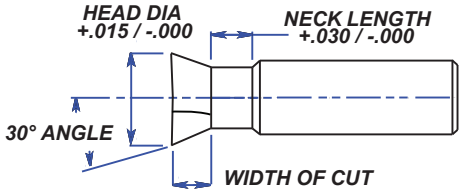
DOVETAIL CUTTERS

SERIES 86 CARBIDE HEAD, STEEL SHANK DOVETAIL CUTTERS

APPLICATION : FOR CUTTING DOVETAILS AND CHAMFERNG

HEAD DIA	WIDTH OF CUT	NECK DIA	ORDER EPD #	ALTIN COATED EDP #	SHANK DIA.	# OF TEETH	O.A.L.	NECK LENGTH	ANGLE PER SIDE
3/8	.187	.160	86-1200	86-1200-C	1/2	5	3-1/8”	1/4	30°
1/2	.250	.210	86-1205	86-1205-C	1/2	6	3-1/8”	1/4	
3/4	.312	.350	86-1210	86-1210-C	1/2	5	3-1/8”	1/4	
3/8	.125	.125	86-1215	86-1215-C	1/2	4	3-1/8”	1/4	45°
1/2	.156	.185	86-1220	86-1220-C	1/2	4	3-1/8”	1/4	
3/4	.250	.250	86-1225	86-1225-C	1/2	5	3-1/8”	1/4	



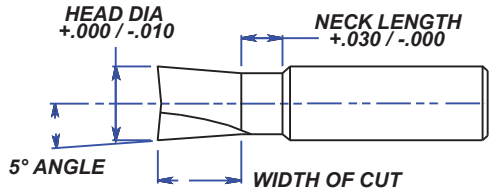


SERIES 86 SOLID CARBIDE DOVETAIL CUTTERS

APPLICATION : USED IN CHAMFERING OR MILLING ANGLES ON THE BOTTOM SURFACE OF A PART

5° PER SIDE 10° INCLUDED

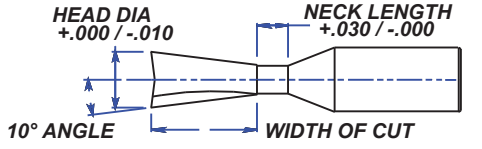
HEAD DIA	WIDTH OF CUT	NECK DIA	ORDER EPD #	ALTIN COATED EDP #	SHANK DIA.	# OF TEETH	O.A.L.	NECK LENGTH
3/16	.500	.100	86-0100	86-0100-C	3/16	4	2-1/2”	1/4
1/4	.625	.135	86-0105	86-0105-C	1/4	4	2-1/2”	1/4
5/16	.750	.175	86-0110	86-0110-C	5/16	4	2-1/2”	1/4
3/8	.875	.210	86-0115	86-0115-C	3/8	4	2-1/2”	1/4
1/2	1.000	.300	86-0120	86-0120-C	1/2	6	3”	1/4
5/8	1.250	.405	86-0125	86-0125-C	5/8	6	3-1/2”	1/4





10° PER SIDE 20° INCLUDED

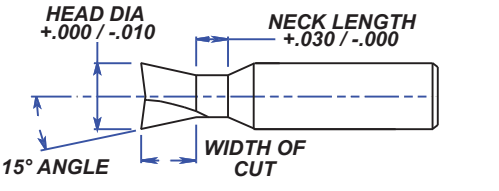
HEAD DIA	WIDTH OF CUT	NECK DIA	ORDER EPD #	ALTIN COATED EDP #	SHANK DIA.	# OF TEETH	O.A.L.	NECK LENGTH
3/16	.250	.090	86-0200	86-0200-C	3/16	4	2-1/2”	1/4
1/4	.350	.120	86-0205	86-0205-C	1/4	4	2-1/2”	1/4
5/16	.450	.140	86-0210	86-0210-C	5/16	4	2-1/2”	1/4
3/8	.550	.175	86-0215	86-0215-C	3/8	4	2-1/2”	1/4
1/2	.650	.250	86-0220	86-0220-C	1/2	6	3”	1/4
5/8	.750	.350	86-0225	86-0225-C	5/8	6	3-1/2”	1/4





15° PER SIDE 30° INCLUDED

HEAD DIA	WIDTH OF CUT	NECK DIA	ORDER EPD #	ALTIN COATED EDP #	SHANK DIA.	# OF TEETH	O.A.L.	NECK LENGTH
3/16	.125	.110	86-1000	86-1000-C	3/16	4	2-1/2”	1/4
1/4	.160	.150	86-1005	86-1005-C	1/4	4	2-1/2”	1/4
5/16	.190	.200	86-1010	86-1010-C	5/16	4	2-1/2”	1/4
3/8	.250	.230	86-1015	86-1015-C	3/8	4	2-1/2”	1/4
1/2	.320	.320	86-1020	86-1020-C	1/2	6	3”	1/4
5/8	.500	.345	86-1025	86-1025-C	5/8	6	3-1/2”	1/4

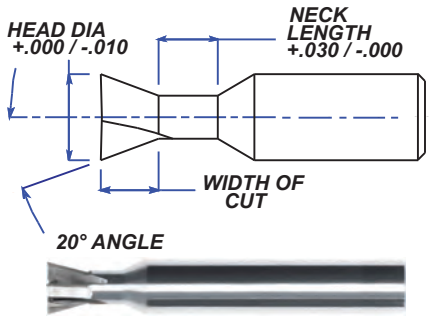




APPLICATION : FOR CUTTING DOVETAILS AND CHAMFERNG

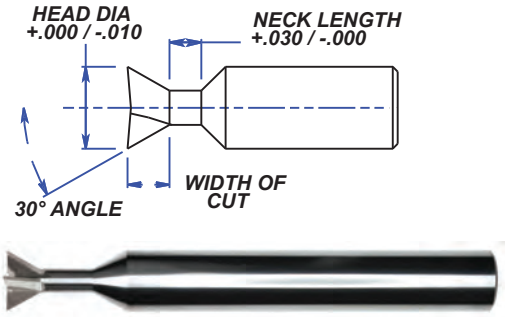
20° PER SIDE 40° INCLUDED

HEAD DIA	WIDTH OF CUT	NECK DIA	ORDER EPD #	ALTIN COATED EDP #	SHANK DIA.	# OF TEETH	O.A.L.	NECK LENGTH
1/8	.085	.062	86-1250	86-1250-C	1/8	3	2”	3/16
3/16	.130	.090	86-1255	86-1255-C	3/16	3	2-1/2”	1/4
1/4	.170	.125	86-1260	86-1260-C	1/4	4	2-1/2”	1/4
5/16	.255	.125	86-1265	86-1265-C	5/16	4	2-1/2”	1/4
3/8	.305	.160	86-1270	86-1270-C	3/8	5	2-1/2”	1/4
1/2	.405	.200	86-1275	86-1275-C	1/2	6	3”	1/4
5/8	.500	.260	86-1280	86-1280-C	5/8	6	3-1/2”	1/4



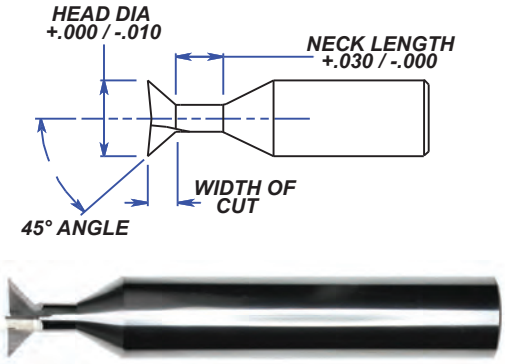
30° PER SIDE 60° INCLUDED

HEAD DIA	WIDTH OF CUT	NECK DIA	ORDER EPD #	ALTIN COATED EDP #	SHANK DIA.	# OF TEETH	O.A.L.	NECK LENGTH
1/8	.054	.062	86-1095	86-1095-C	1/8	3	2”	3/16
3/16	.080	.090	86-1100	86-1100-C	3/16	3	2-1/2”	1/4
1/4	.100	.125	86-1105	86-1105-C	1/4	4	2-1/2”	1/4
5/16	.160	.125	86-1107	86-1107-C	5/16	4	2-1/2”	1/4
3/8	.180	.160	86-1110	86-1110-C	3/8	5	2-1/2”	1/4
1/2	.250	.200	86-1115	86-1115-C	1/2	6	3”	1/4
5/8	.315	.260	86-1117	86-1117-C	5/8	6	3-1/2”	1/4
3/4	.380	.311	86-1118	86-1118-C	3/4	6	4”	1/4



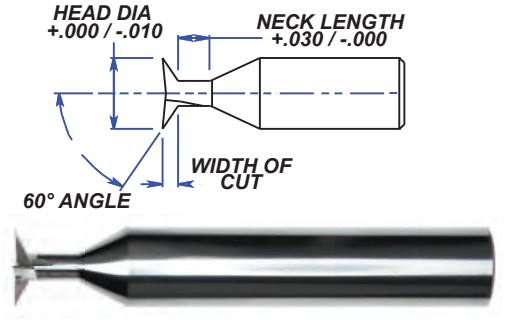
45° PER SIDE 90° INCLUDED

HEAD DIA	WIDTH OF CUT	NECK DIA	ORDER EPD #	ALTIN COATED EDP #	SHANK DIA.	# OF TEETH	O.A.L.	NECK LENGTH
1/8	.032	.062	86-1119	86-1119-C	1/8	3	2”	3/16
3/16	.045	.090	86-1120	86-1120-C	3/16	3	2-1/2”	1/4
1/4	.062	.115	86-1125	86-1125-C	1/4	3	2-1/2”	1/4
5/16	.080	.150	86-1127	86-1127-C	5/16	4	2-1/2”	1/4
3/8	.120	.125	86-1130	86-1130-C	3/8	4	2-1/2”	1/4
1/2	.150	.185	86-1135	86-1135-C	1/2	4	3”	1/4
5/8	.190	.245	86-1137	86-1137-C	5/8	6	3-1/2”	1/4
3/4	.230	.290	86-1139	86-1139-C	3/4	6	4”	1/4
7/8	.270	.335	86-1142	86-1142-C	7/8	6	4”	1/4
1”	.320	.360	86-1144	86-1144-C	1”	6	4”	1/4



60° PER SIDE 120° INCLUDED

HEAD DIA	WIDTH OF CUT	NECK DIA	ORDER EPD #	ALTIN COATED EDP #	SHANK DIA.	# OF TEETH	O.A.L.	NECK LENGTH
3/16	.032	.070	86-1160	86-1160-C	3/16	3	2-1/2”	1/4
1/4	.048	.080	86-1165	86-1165-C	1/4	3	2-1/2”	1/4
5/16	.062	.095	86-1170	86-1170-C	5/16	4	2-1/2”	1/4
3/8	.078	.100	86-1175	86-1175-C	3/8	4	2-1/2”	1/4
1/2	.094	.170	86-1180	86-1180-C	1/2	4	3”	1/4
5/8	.125	.180	86-1185	86-1185-C	5/8	5	3-1/2”	1/4



DOVETAIL CUTTERS

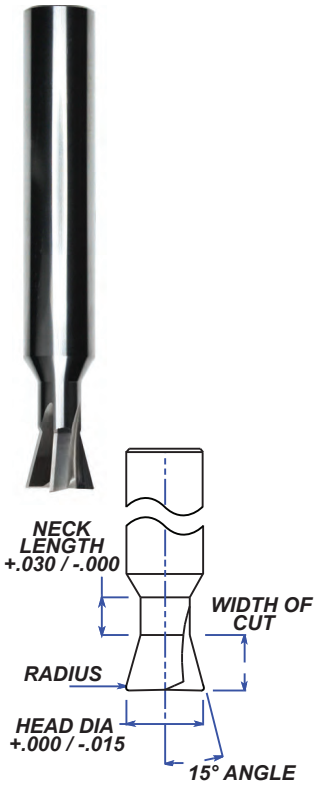
SERIES 86 DOVETAIL CUTTERS W/RADIUS

APPLICATION : FOR CUTTING DOVETAILS AND CHAMFERNG

SOLID CARBIDE

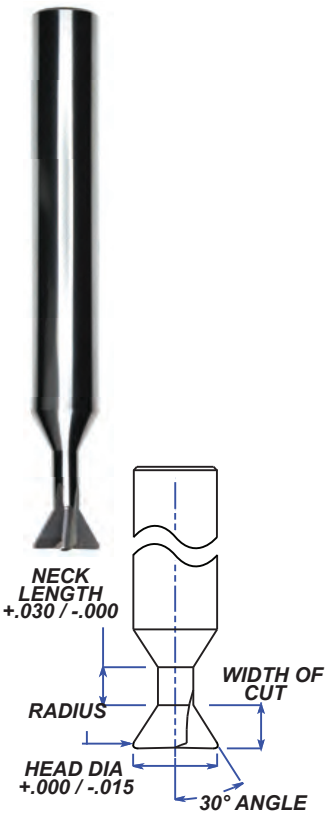
15° PER SIDE 30° INCLUDED

HEAD DIA	RADIUS SIZE	ORDER EDP #	ALTIN COATED EDP #	WIDTH OF CUT	NECK DIA	SHANK DIA	# OF TEETH	O.A.L.	NECK LENGTH
3/16	.005	86-2500	86-2500-C	.125	.110	3/16	4	2-1/2”	1/4
	.010	86-2505	86-2505-C						
	.015	86-2510	86-2510-C						
1/4	.005	86-2515	86-2515-C	.160	.150	1/4	4	2-1/2”	1/4
	.010	86-2520	86-2520-C						
	.015	86-2530	86-2530-C						
5/16	.005	86-2535	86-2535-C	.190	.200	5/16	4	2-1/2”	1/4
	.010	86-2540	86-2540-C						
	.015	86-2545	86-2545-C						
3/8	.005	86-2550	86-2550-C	.250	.230	3/8	4	2-1/2”	1/4
	.010	86-2555	86-2555-C						
	.015	86-2560	86-2560-C						
1/2	.005	86-2565	86-2565-C	.320	.320	1/2	6	3”	1/4
	.010	86-2570	86-2570-C						
	.015	86-2575	86-2575-C						
	.030	86-2580	86-2580-C						
5/8	.005	86-2585	86-2585-C	.500	.345	5/8	6	3-1/2”	1/4
	.010	86-2590	86-2590-C						
	.015	86-2595	86-2595-C						
	.030	86-2600	86-2600-C						



30° PER SIDE 60° INCLUDED

HEAD DIA	RADIUS SIZE	ORDER EDP #	ALTIN COATED EDP #	WIDTH OF CUT	NECK DIA	SHANK DIA	# OF TEETH	O.A.L.	NECK LENGTH
1/8	.005	86-3000	86-3000-C	.054	.062	1/8	3	2”	3/16
	.010	86-3005	86-3005-C						
	.015	86-3010	86-3010-C						
3/16	.005	86-3015	86-3015-C	.080	.090	3/16	3	2-1/2”	1/4
	.010	86-3020	86-3020-C						
	.015	86-3025	86-3025-C						
1/4	.005	86-3030	86-3030-C	.100	.125	1/4	4	2-1/2”	1/4
	.010	86-3035	86-3035-C						
	.015	86-3040	86-3040-C						
5/16	.005	86-3045	86-3045-C	.160	.125	5/16	4	2-1/2”	1/4
	.010	86-3050	86-3050-C						
	.015	86-3055	86-3055-C						
3/8	.005	86-3060	86-3060-C	.180	.160	3/8	5	2-1/2”	1/4
	.010	86-3065	86-3065-C						
	.015	86-3070	86-3070-C						
	.030	86-3075	86-3075-C						
1/2	.005	86-3080	86-3080-C	.250	.200	1/2	6	3”	1/4
	.010	86-3085	86-3085-C						
	.015	86-3090	86-3090-C						
	.030	86-3095	86-3095-C						
5/8	.005	86-4000	86-4000-C	.315	.260	5/8	6	3-1/2”	1/4
	.010	86-4005	86-4005-C						
	.015	86-4010	86-4010-C						
	.030	86-4015	86-4015-C						
3/4	.005	86-4020	86-4020-C	.380	.311	3/4	6	1/4”	1/4
	.010	86-4025	86-4025-C						
	.015	86-4030	86-4030-C						
	.030	86-4035	86-4035-C						

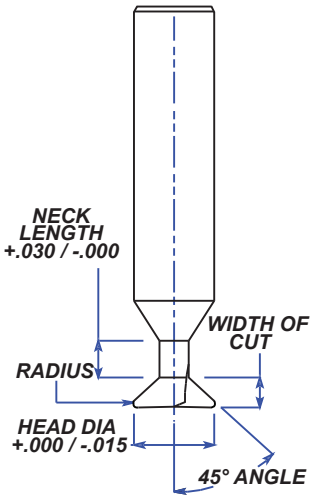


APPLICATION : FOR CUTTING DOVETAILS AND CHAMFERNG

SOLID CARBIDE

45° PER SIDE 90° INCLUDED

HEAD DIA	RADIUS SIZE	ORDER EDP #	ALTIN COATED EDP #	WIDTH OF CUT	NECK DIA	SHANK DIA.	# OF TEETH	O.A.L. LENGTH	NECK LENGTH
1/8	.005	86-5000	86-5000-C	.032	.062	1/8	3	2”	3/16
	.010	86-5005	86-5005-C						
	.015	86-5010	86-5010-C						
3/16	.005	86-5015	86-5015-C	.045	.090	3/16	3	2-1/2”	1/4
	.010	86-5020	86-5020-C						
	.015	86-5025	86-5025-C						
1/4	.005	86-5030	86-5030-C	.062	.115	1/4	3	2-1/2”	1/4
	.010	86-5035	86-5035-C						
	.015	86-5040	86-5040-C						
	.030	86-5045	86-5045-C						
5/16	.005	86-5050	86-5050-C	.080	.150	5/16	4	2-1/2”	1/4
	.010	86-5055	86-5055-C						
	.015	86-5060	86-5060-C						
	.030	86-5065	86-5065-C						
3/8	.005	86-5070	86-5070-C	.120	.125	3/8	4	2-1/2”	1/4
	.010	86-5075	86-5075-C						
	.015	86-5080	86-5080-C						
	.030	86-5085	86-5085-C						
1/2	.005	86-5090	86-5090-C	.150	.185	1/2	4	3”	1/4
	.010	86-5095	86-5095-C						
	.015	86-6000	86-6000-C						
	.030	86-6005	86-6005-C						
	.060	86-6010	86-6010-C						
5/8	.005	86-6015	86-6015-C	.190	.245	5/8	6	3-1/2”	1/4
	.010	86-6020	86-6020-C						
	.015	86-6025	86-6025-C						
	.030	86-6030	86-6030-C						
	.060	86-6035	86-6035-C						
3/4	.005	86-6040	86-6040-C	.230	.290	3/4	6	4”	1/4
	.010	86-6045	86-6045-C						
	.015	86-6050	86-6050-C						
	.030	86-6055	86-6055-C						
	.060	86-6060	86-6060-C						
7/8	.005	86-6065	86-6065-C	.270	.335	7/8	6	4”	1/4
	.010	86-6070	86-6070-C						
	.015	86-6075	86-6075-C						
	.030	86-6080	86-6080-C						
	.060	86-6085	86-6085-C						
1”	.005	86-6090	86-6090-C	.320	.360	1”	6	4”	1/4
	.010	86-6095	86-6095-C						
	.015	86-7000	86-7000-C						
	.030	86-7005	86-7005-C						
	.060	86-7010	86-7010-C						

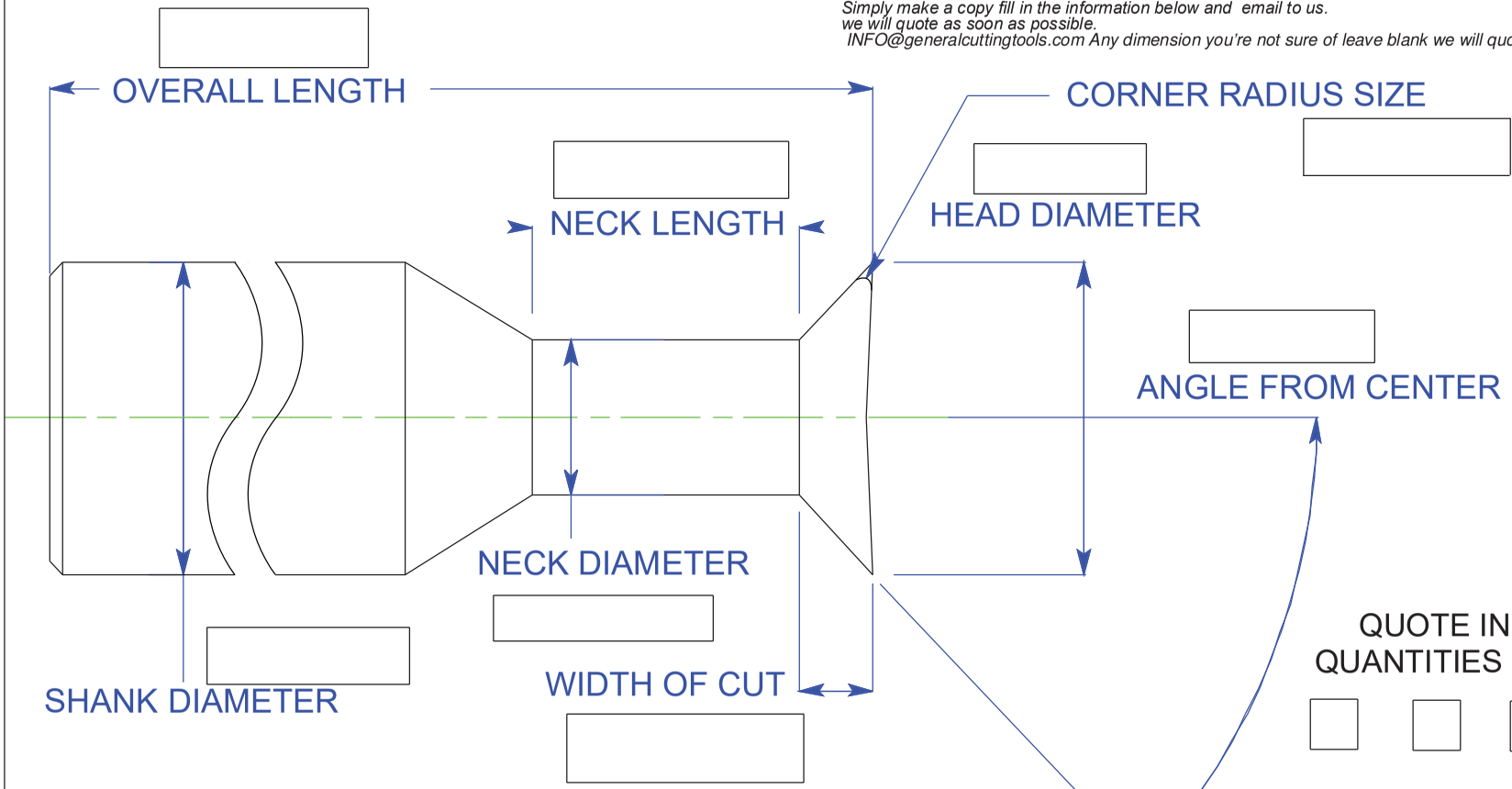




DOVETAIL CUTTER

CARBIDE DOVETAIL CUTTERS MADE TO YOUR SPECIFICATIONS

Simply make a copy fill in the information below and email to us. we will quote as soon as possible. INFO@generalcuttingtools.com Any dimension you're not sure of leave blank we will quote standard



QUOTE IN QUANTITIES OF

NOTES

INTERNALTOOL

DRAWN BY:	DATE:	TOLERANCE UNLESS SPECIFIED
TOOLNUMBER:		.X +/- .015 .XX +/-.005 .XXX +/-.002

TYPE OF MATERIAL TO BE CUT

COMPANY NAME	
YOUR NAME	
PHONE #	
EMAIL	
YOUR DISTRIBUTOR	

ITI CARBIDE: SPECIALLY BLENDED FOR OPTIMUM PERFORMANCE

General Cutting Tools

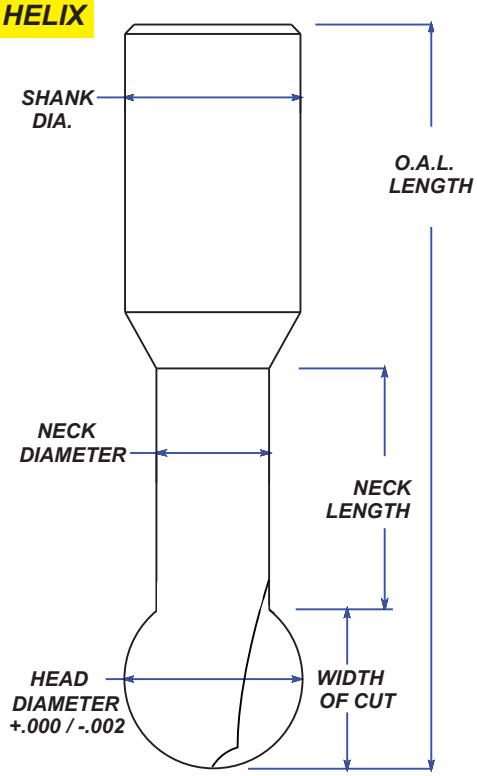
SERIES 29 LOLLIPOP CUTTERS

APPLICATION: MOLD RELIEF CUTS AND PROFILE MILLING

UNDERCUTTING ENDMILLS

270° CUT
10° HELIX

HEAD DIA +.000/-.002	WIDTH OF CUT +.015	NECK DIA +.000/-.005	NECK LENGTH +.030	ORDER EDP #	ALTIN COATED EDP #	SHANK DIA	O.A.L.
1/8	.107	.075	.250	29-4000	29-4000-C	1/8	2-1/2”
			.375	29-4005	29-4005-C		
			.500	29-4010	29-4010-C		
			.750	29-4015	29-4015-C		
			1.000	29-4020	29-4020-C		
			1.250	29-4025	29-4025-C		
			1.500	29-4030	29-4030-C		
3/16	.160	.115	.250	29-4035	29-4035-C	3/16	2-1/2”
			.375	29-4040	29-4040-C		
			.500	29-4045	29-4045-C		
			.750	29-4050	29-4050-C		
			1.000	29-4055	29-4055-C		
			1.250	29-4060	29-4060-C		
			1.500	29-4065	29-4065-C		
1/4	.213	.155	.250	29-4070	29-4070-C	1/4	3”
			.375	29-4075	29-4075-C		
			.500	29-4080	29-4080-C		
			.750	29-4085	29-4085-C		
			1.000	29-4090	29-4090-C		
			1.250	29-4095	29-4095-C		
			1.500	29-4100	29-4100-C	1/4	4”
			2.000	29-4105	29-4105-C		
5/16	.266	.200	.250	29-4110	29-4110-C	5/16	3”
			.375	29-4115	29-4115-C		
			.500	29-4120	29-4120-C		
			1.000	29-4125	29-4125-C		
			1.250	29-4130	29-4130-C		
			1.500	29-4135	29-4135-C	5/16	4”
			2.000	29-4140	29-4140-C		
3/8	.325	.240	.250	29-4145	29-4145-C	3/8	3”
			.375	29-4150	29-4150-C		
			.500	29-4155	29-4155-C		
			.750	29-4160	29-4160-C		
			1.000	29-4165	29-4165-C		
			1.250	29-4170	29-4170-C		
			1.500	29-4175	29-4175-C	3/8	4”
			2.000	29-4180	29-4180-C		
1/2	.425	.320	.375	29-4185	29-4185-C	1/2	3”
			.500	29-4190	29-4190-C		
			1.000	29-4195	29-4195-C		
			1.250	29-4200	29-4200-C		
			1.500	29-4205	29-4205-C	1/2	4”
			2.000	29-4210	29-4210-C		





AVAILABLE IN UN-COATED OR ALTIN COATED

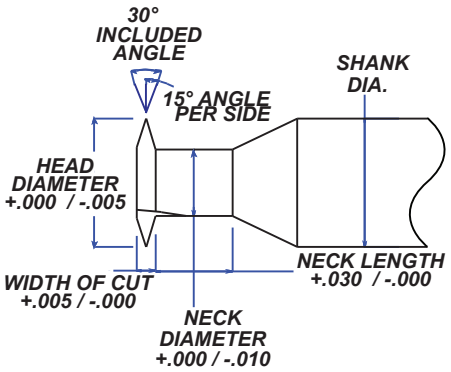
DOUBLE ANGLE CUTTERS

SERIES 92 DOUBLE ANGLE CUTTERS

APPLICATION: FOR CUTTING CHAMFERS, SERRATIONS, ANGLES ETC.

30° INC DOUBLE ANGLE CUTTERS								
HEAD DIA	WIDTH OF CUT	ORDER EDP #	ALTIN COATED EDP #	NECK LENGTH	NECK DIA	# OF TEETH	SHANK DIA	O.A.L.
1/8	.020	92-0880	92-0880-C	.188	.050	4	1/8	2”
		92-0885	92-0885-C	.375				
3/16	.026	92-0890	92-0890-C	.250	.080	4	3/16	2-1/2”
		92-0895	92-0895-C	.750				
1/4	.032	92-0900	92-0900-C	.250	.125	4	1/4	2-1/2”
		92-0905	92-0905-C	.750				
5/16	.040	92-0902	92-0902-C	.312	.160	4	5/16	2-1/2”
		92-0904	92-0904-C	1.000				
3/8	.050	92-0907	92-0907-C	.312	.250	4	3/8	2-1/2”
		92-0910	92-0910-C	1.000				
1/2	.067	92-0912	92-0912-C	.375	.250	4	1/2	3”
		92-0920	92-0920-C	1.250				
5/8*	.070	92-0925	92-0925-C	.250	.250	6	3/8	3”
3/4*	.100	92-0930	92-0930-C	.250	.250	5	3/8	3”

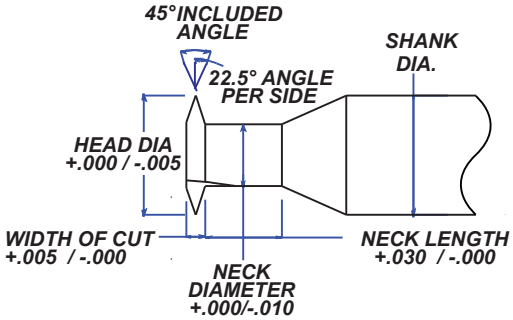
**CARBIDE HEAD WITH STEEL SHANK*





45° INC DOUBLE ANGLE CUTTERS								
HEAD DIA	WIDTH OF CUT	ORDER EDP #	ALTIN COATED EDP #	NECK LENGTH	NECK DIA	# OF TEETH	SHANK DIA	O.A.L.
1/8	.030	92-1500	92-1500-C	.188	.050	4	1/8	2”
		92-1505	92-1505-C	.375				
3/16	.044	92-1510	92-1510-C	.250	.080	4	3/16	2-1/2”
		92-1515	92-1515-C	.750				
1/4	.050	92-1520	92-1520-C	.250	.125	4	1/4	2-1/2”
		92-1525	92-1525-C	.750				
5/16	.062	92-1530	92-1530-C	.312	.160	4	5/16	2-1/2”
		92-1535	92-1535-C	1.000				
3/8	.075	92-1540	92-1540-C	.312	.250	4	3/8	2-1/2”
		92-1545	92-1545-C	1.000				
1/2	.100	92-1550	92-1550-C	.375	.250	4	1/2	3”
		92-1555	92-1555-C	1.250				
5/8*	.125	92-1560	92-1560-C	.250	.250	5	3/8	3”
3/4*	.150	92-1565	92-1565-C	.250	.250	5	3/8	3”

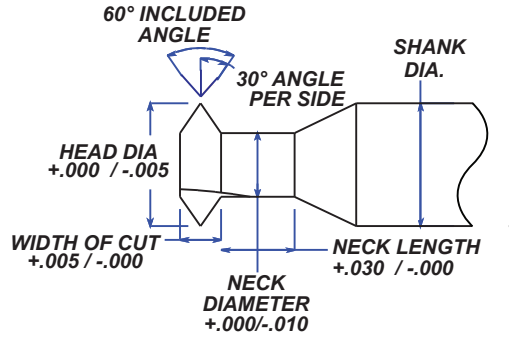
**CARBIDE HEAD WITH STEEL SHANK*





60° INC DOUBLE ANGLE CUTTERS								
HEAD DIA	WIDTH OF CUT	ORDER EDP #	ALTIN COATED EDP #	NECK LENGTH	NECK DIA	# OF TEETH	SHANK DIA	O.A.L.
1/8	.062	92-1180	92-1180-C	.188	.050	4	1/8	2”
		92-1185	92-1185-C	.375				
3/16	.093	92-1190	92-1190-C	.250	.080	4	3/16	2-1/2”
		92-1195	92-1195-C	.750				
1/4	.125	92-1200	92-1200-C	.250	.125	4	1/4	2-1/2”
		92-1205	92-1205-C	.750				
5/16	.088	92-1207	92-1207-C	.312	.160	4	5/16	2-1/2”
		92-1208	92-1208-C	1.000				
3/8	.109	92-1210	92-1210-C	.312	.250	4	3/8	2-1/2”
		92-1215	92-1215-C	1.000				
1/2	.140	92-1220	92-1220-C	.375	.250	4	1/2	3”
		92-1225	92-1225-C	1.250				
5/8*	.144	92-1230	92-1230-C	.250	.250	5	3/8	3”
3/4*	.217	92-1235	92-1235-C	.250	.250	5	3/8	3”

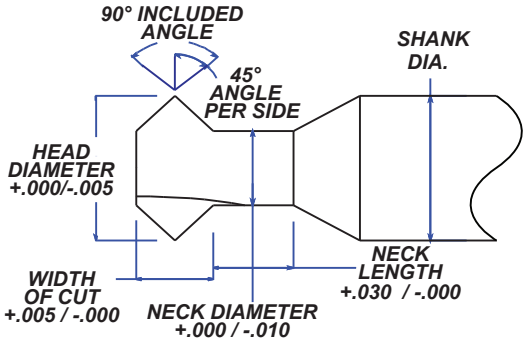
**CARBIDE HEAD WITH STEEL SHANK*





APPLICATION: FOR CUTTING CHAMFERS, SERRATIONS, ANGLES ECT.

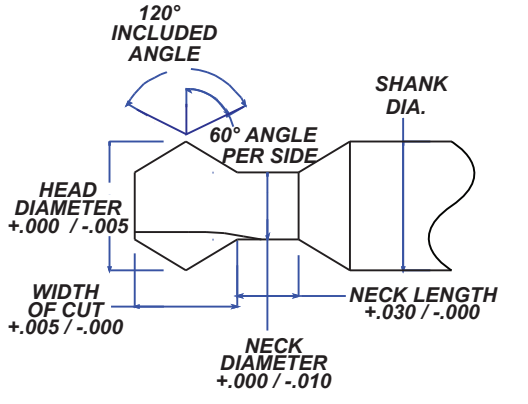
90° INC DOUBLE ANGLE CUTTERS								
HEAD DIA	WIDTH OF CUT	ORDER EDP #	ALTIN COATED EDP #	NECK LENGTH	NECK DIA	# OF TEETH	SHANK DIA	O.A.L.
3/32	.047	92-0955	92-0955-C	.125	.045	2	1/8	2”
		92-0960	92-0960-C	.250				
1/8	.062	92-0965	92-0965-C	.188	.062	4	1/8	2”
		92-0970	92-0970-C	.500				
3/16	.093	92-0975	92-0975-C	.250	.093	4	3/16	2-1/2”
		92-0980	92-0980-C	.500				
		92-0985	92-0985-C	.750				
		92-0990	92-0990-C	1.000				
1/4	.120	92-1000	92-1000-C	.250	1/8	4	1/4	2-1/2”
		92-1002	92-1002-C	.500				
		92-1005	92-1005-C	.750				
		92-1006	92-1006-C	1.000				
5/16	.125	92-1007	92-1007-C	.500	3/16	4	5/16	2-1/2”
		92-1008	92-1008-C	.750				
		92-1009	92-1009-C	1.000				
3/8	.185	92-1010	92-1010-C	.312	3/16	4	3/8	2-1/2”
		92-1011	92-1011-C	.500				
		92-1012	92-1012-C	.750				
		92-1015	92-1015-C	1.000				
1/2	.250	92-1020	92-1020-C	.375	1/4	4	1/2	3”
		92-1022	92-1022-C	.625				
		92-1023	92-1023-C	.875				
		92-1025	92-1025-C	1.250				
1/2*	.125	92-1100	92-1100-C	.250	1/4	6	1/2	3-1/8”
	.187	92-1105	92-1105-C	.250				
5/8	.312	92-1106	92-1106-C	.500	.300	4	5/8	3-1/2”
		92-1107	92-1107-C	.750				
		92-1108	92-1108-C	1.250				
5/8*	.187	92-1110	92-1110-C	.250	.250	6	1/2	3-1/8”
	.250	92-1115	92-1115-C	.250	.280	6		
3/4*	.125	92-1117	92-1117-C	.250	.250	6	1/2	3-1/8”
	.250	92-1120	92-1120-C	.250	.370	6		
1*	.125	92-1125	92-1125-C	.250	.250	8	1/2	3-1/8”
	.250	92-1130	92-1130-C	.250	.490	8		





***CARBIDE HEAD WITH STEEL SHANK**

120° INC DOUBLE ANGLE CUTTERS								
HEAD DIA	WIDTH OF CUT	ORDER EDP #	ALTIN COATED EDP #	NECK LENGTH	NECK DIA	# OF TEETH	SHANK DIA	O.A.L.
1/8	.109	92-1280	92-1280-C	.188	.062	4	1/8	2”
		92-1285	92-1285-C	.500				
3/16	.163	92-1290	92-1290-C	.250	.094	4	3/16	2-1/2”
		92-1295	92-1295-C	.750				
1/4	.215	92-1300	92-1300-C	.250	.125	4	1/4	2-1/2”
		92-1302	92-1302-C	.750				
5/16	.281	92-1304	92-1304-C	.312	.150	4	5/16	2-1/2”
		92-1306	92-1306-C	1.000				
3/8	.320	92-1310	92-1310-C	.312	.188	4	3/8	2-1/2”
		92-1315	92-1315-C	1.000				
1/2	.430	92-1320	92-1320-C	.375	.250	4	1/2	3”
		92-1325	92-1325-C	1.250				





THREAD MILLS

SERIES 88 SOLID CARBIDE MINI THREAD MILLS

APPLICATION: FOR CUTTING THREADS

INCH	METRIC	TOOL TO USE
5-40	M3.0 X .5	88-0870
5-44	M3.5 X .6	88-0880
6-32		88-0890
6-40	M4.0 X .7	88-0900
8-32	M4.5 X .7	88-0910
8-36	M5.0 X .8	88-0915
10-32		
10-24	M6.0 X 1.0	88-1000
12-24	M7.0 X 1.0	88-1005
12-28		
1/4-20		
1/4-28		
1/4-18	M8.0 X 1.5	88-1010
5/16-18	M8.0 X 1.0	88-1020
5/16-24	M8.0 X 1.25	88-1025
3/8-16	M10.0 X 1.0	88-1027
3/8-24	M10.0 X 1.25	
7/16-14		88-1030
7/16-20		88-1035
1/2-13	M12.0 X 1.25	88-1040
1/2-20	M12.0 X 1.75	88-1045
9/16-12	M14.0 X 1.5	88-1050
9/16-18	M14.0 X 2.0	88-1055
5/8-11	M16 X 2.0	88-1060
5/8-18	M16 X 5.0	88-1065
3/4-10		88-1070
3/4-16		

MATCH COLOR TO FIND YOUR TOOL

HEAD DIA	WIDTH OF CUT	NECK DIA	ORDER EDP #	ALTIN COATED EDP #	DEPTH OF CUT	SHANK DIA	# OF TEETH	PITCH RANGE
.098	.030	.050	88-0870	88-0870-C	1/4	1/8	3	32-64
			88-0880	88-0880-C	3/8	1/8	3	
			88-0890	88-0890-C	1/2	1/8	3	
.125	.035	.060	88-0900	88-0900-C	1/4	1/8	3	30-56
			88-0910	88-0910-C	3/8	1/8	3	
			88-0915	88-0915-C	1/2	1/8	3	
.148	.046	.070	88-1000	88-1000-C	1/4	3/16	3	20-56
			88-1005	88-1005-C	1/2	3/16	3	
3/16	.055	.090	88-1010	88-1010-C	3/8	3/16	3	18-56
			88-1015	88-1015-C	3/4	3/16	3	
			88-1017	88-1017-C	1"	3/16	3	
1/4	.065	.130	88-1020	88-1020-C	3/8	1/4	4	16-48
			88-1025	88-1025-C	3/4	1/4	4	
			88-1027	88-1027-C	1	1/4	4	
5/16	.078	.180	88-1030	88-1030-C	1/2	5/16	4	14-40
			88-1035	88-1035-C	1	5/16	4	
3/8	.095	.200	88-1040	88-1040-C	1/2	3/8	6	12-32
			88-1045	88-1045-C	3/4	3/8	6	
			88-1050	88-1050-C	1	3/8	6	
			88-1055	88-1055-C	1-1/4	3/8	6	
1/2	.119	.300	88-1060	88-1060-C	1	1/2	5	11-32
			88-1065	88-1065-C	1-1/4	1/2	5	
			88-1070	88-1070-C	1-1/2	1/2	5	



THREAD MILLS HAVE A SMALL FLAT ON THE TIP. SIZE DEPENDS ON PITCH. IF YOUR APPLICATION DOESN'T REQUIRE A FLAT, TRY OUR DOUBLE ANGLE CUTTERS ON PAGE 102-103.

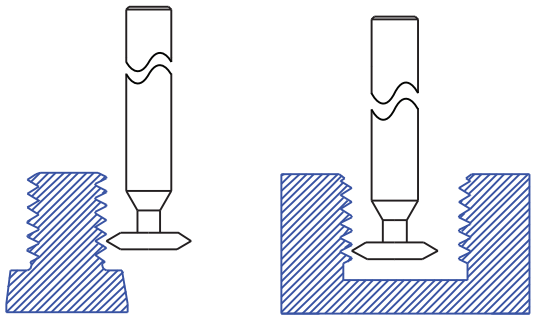
SERIES 88 THREAD MILLS CARBIDE HEAD STEEL SHANK

HEAD DIA	PITCH RANGE	WIDTH OF CUT	ORDER EDP #	ALTIN COATED EDP #	# OF TEETH
1/2	16 - 32	.062	88-1100	88-1100-C	6
5/8	16 - 32	.062	88-1105	88-1105-C	
	11 - 28	.094	88-1110	88-1110-C	
	8 - 28	.135	88-1112	88-1112-C	
3/4	11 - 24	.094	88-1115	88-1115-C	
	7 - 24	.156	88-1120	88-1120-C	
1"	7 - 20	.156	88-1125	88-1125-C	8
	4 - 18	.250	88-1130	88-1130-C	

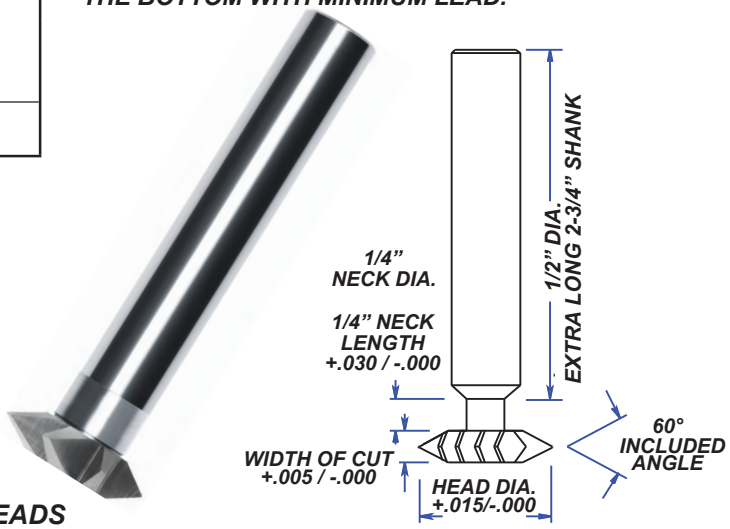
APPLICATION:

1. THREAD MILLING ELIMINATES THE NEED FOR SPECIAL TAPS. CUT ANY SIZE THREAD YOU WANT. UNDER SIZE, OVER SIZE, ANY PITCH, EVEN A TAPERED THREAD.

2. THREAD BLIND HOLES ALL THE WAY DOWN TO THE BOTTOM WITH MINIMUM LEAD.



MILL EXTERNAL THREADS ***MILL INTERNAL THREADS***



ITI CARBIDE: FOR EXTRA LONG TOOL LIFE

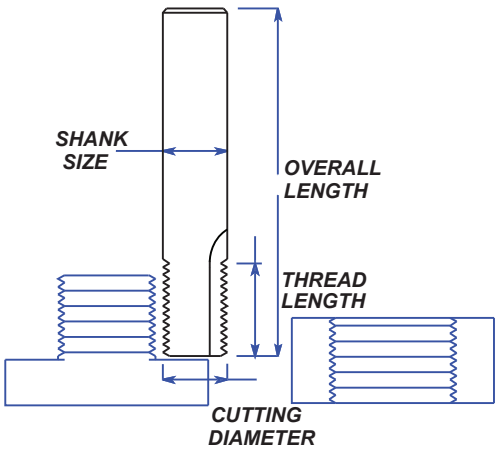
Carbide Cutting Tools

SERIES 89 SOLID CARBIDE MULTI THREAD MILLS

APPLICATION: FOR CUTTING INTERNAL OR EXTERNAL THREAD

SIZE	CUTTING DIA	THREAD LENGTH	O.A.L.	NUMBER OF FLUTES	SHANK SIZE	ALTIN COATED EDP #
6 - 32	.100	.218	2”	3	1/8	89-1200
8 - 32	.115	.250	2”	3	1/8	89-1205
8 - 36	.115	.250	2”	3	1/8	89-1210
10 - 24	.120	.312	2”	3	3/16	89-1215
10 - 32	.120	.312	2”	3	3/16	89-1220
1/4 - 20	.180	.500	2-1/2”	3	3/16	89-1225
1/4 - 28	.180	.500	2-1/2”	3	3/16	89-1230
5/16 - 18	.240	.625	2-1/2”	3	1/4	89-1235
5/16 - 24	.240	.625	2-1/2”	3	1/4	89-1240
3/8 - 16	.290	.750	3”	4	5/16	89-1245
3/8 - 24	.290	.750	3”	4	5/16	89-1250
7/16 - 14	.340	.875	3”	4	3/8	89-1255
7/16 - 20	.340	.875	3”	4	3/8	89-1260
1/2 - 13	.350	.875	3-1/2”	4	3/8	89-1265
1/2 - 20	.350	.875	3-1/2”	4	3/8	89-1270
9/16 - 12	.370	.875	3-1/2”	4	1/2	89-1275
9/16 - 18	.370	.875	3-1/2”	4	1/2	89-1280
5/8 - 11	.470	1.250	3-1/2”	5	1/2	89-1285
5/8 - 18	.470	1.250	3-1/2”	5	1/2	89-1290
3/4 - 10	.495	1.250	3-1/2”	5	1/2	89-1295
3/4 - 16	.495	1.250	3-1/2”	5	1/2	89-1300
7/8 - 9	.620	1.250	3-1/2”	5	5/8	89-1305
7/8 - 14	.620	1.250	3-1/2”	5	5/8	89-1310
1” - 8	.620	1.375	4”	5	3/4	89-1315
1” - 12	.620	1.375	4”	5	3/4	89-1320

MILL INTERNAL OR EXTERNAL THREADS IN ONE PASS





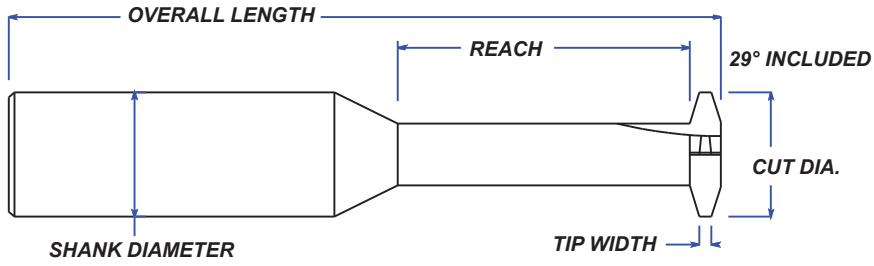
ITI CARBIDE: MAXIMUM SHEAR WITH MINIMUM WEAR

Carbide Cutting Tools

SERIES 35 EXTERNAL ACME THREAD MILLS

APPLICATION : FOR CUTTING INTERNAL OR EXTERNAL THREADS

SOLID CARBIDE



New!



ACME EXTERNAL THREAD MILLS

THREAD SIZE	CUT DIA.	OVERALL LENGTH	SHANK SIZE	TIP WIDTH	# OF TEETH	REACH	ORDER EDP #	ALTIN COATED EDP #
16	.170	2-1/2	1/4	.021	3	.375	35-5000	35-5000-C
14	.220	2-1/2	1/4	.024	3	.500	35-5005	35-5005-C
12	.270	2-1/2	5/16	.028	4	.750	35-5010	35-5010-C
10	.370	2-1/2	3/8	.032	4	.750	35-5015	35-5015-C
8	.500	3”	1/2	.041	4	1.00	35-5020	35-5020-C
6	.750	3”	1/2*	.057	6	1.00	35-5025	35-5025-C
5	.800	3-1/8	1/2*	.069	6	2.00	35-5030	35-5030-C
4	1.120	3-1/8	1/2*	.088	8	2.00	35-5035	35-5035-C

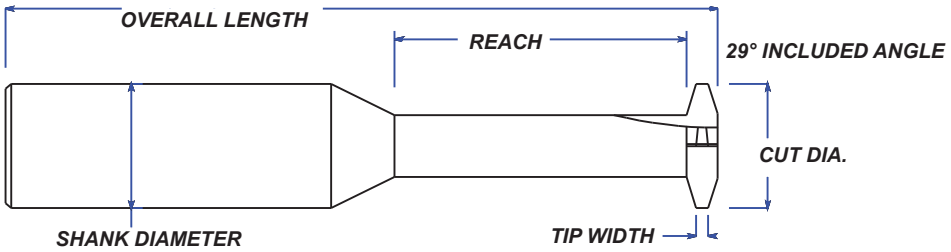
* CARBIDE HEAD ON HARDENED STEEL SHANK

STUB ACME EXTERNAL THREAD MILLS

THREAD SIZE	CUT DIA.	OVERALL LENGTH	SHANK SIZE	TIP WIDTH	# OF TEETH	REACH	ORDER EDP #	ALTIN COATED EDP #
16	.170	2-1/2	1/4	.024	3	.375	35-6000	35-6000-C
14	.220	2-1/2	1/4	.028	3	.500	35-6005	35-6005-C
12	.270	2-1/2	5/16	.033	4	.750	35-6010	35-6010-C
10	.370	2-1/2	3/8	.037	4	.750	35-6015	35-6015-C
8	.500	3”	1/2	.048	4	1.00	35-6020	35-6020-C
6	.750	3”	1/2*	.065	6	1.00	35-6025	35-6025-C
5	.800	3-1/8	1/2*	.079	6	2.00	35-6030	35-6030-C
4	1.120	3-1/8	1/2*	.100	8	2.00	35-6035	35-6035-C

SERIES 135 INTERNAL STUB ACME THREAD MILLS

APPLICATION : FOR CUTTING INTERNAL OR EXTERNAL THREADS





ACME INTERNAL THREAD MILLS

THREAD SIZE	CUT DIA.	O.A.L.	SHANK DIA	TIP WIDTH	# OF TEETH	REACH	ORDER EDP #	ALTIN COATED EDP #
1/4-16	.170	2-1/2	1/4	.021	4	.500	135-3000	135-3000-C
5/16-14	.200	2-1/2	1/4	.024	4	.750	135-3005	135-3005-C
3/8-12	.235	2-1/2	1/4	.028	4	1.000	135-3010	135-3010-C
1/2-10	.320	3”	3/8	.032	4	1.250	135-3015	135-3015-C
5/8-8	.400	3-1/2	1/2	.041	4	1.300	135-3020	135-3020-C
3/4-6 7/8-6	.490	3-1/2	1/2	.057	4	1.300	135-3025	135-3025-C
1”-5 1-1/8-5 1-1/4-5	.620	4”	5/8	.069	5	1.750	135-3030	135-3030-C
1-3/8-4	.745	5”	3/4	.088	5	1.500	135-3035	135-3035-C
1-1/2-4 1-3/4-4	.745	5”	3/4	.088	5	2.500	135-3040	135-3040-C

STUB ACME INTERNAL THREAD MILLS

THREAD SIZE	CUT DIA.	O.A.L.	SHANK DIA	TIP WIDTH	# OF TEETH	REACH	ORDER EDP #	ALTIN COATED EDP #
1/4-16	.170	2-1/2	1/4	.024	4	.500	135-4000	135-4000-C
5/16-14	.200	2-1/2	1/4	.028	4	.750	135-4005	135-4005-C
3/8-12	.235	2-1/2	1/4	.033	4	1.000	135-4010	135-4010-C
1/2-10	.320	3”	3/8	.037	4	1.250	135-4015	135-4015-C
5/8-8	.400	3-1/2	1/2	.048	4	1.300	135-4020	135-4020-C
3/4-6 7/8-6	.490	3-1/2	1/2	.065	4	1.300	135-4025	135-4025-C
1”-5 1-1/8-5 1-1/4-5	.620	4”	5/8	.079	5	1.750	135-4030	135-4030-C
1-3/8-4	.745	5”	3/4	.100	5	1.500	135-4035	135-4035-C
1-1/2-4 1-3/4-4	.745	5”	3/4	.100	5	2.500	135-4040	135-4040-C

CARBIDE REAMERS

SERIES 93 CARBIDE REAMERS

APPLICATION : FINISHING OR ENLARGING DRILLED HOLES IN METAL

-STRAIGHT FLUTE
-RIGHT HAND CUT
-DIA +.003/-.000



CUTTING DIA	FLUTE LENGTH	O.A.L.	SHANK SIZE	# OF FLUTES	ORDER EDP #
.0620	3/8	1-1/2	.0620	4	93-0620
.0625	3/8	1-1/2	.0625	4	93-0625
.0630	3/8	1-1/2	.0630	4	93-0630
.0635	3/8	1-1/2	.0635	4	93-0635
.0930	1/2	2”	.0930	4	93-0930
.0935	1/2	2”	.0935	4	93-0935
.0938	1/2	2”	.0938	4	93-0938
.0940	1/2	2”	.0940	4	93-0940
.0945	1/2	2”	.0945	4	93-0945
.1090	5/8	2-1/4	.1090	4	93-1090
.1094	5/8	2-1/4	.1094	4	93-1094
.1100	5/8	2-1/4	.1100	4	93-1100
.1240	5/8	2-1/4	.1240	4	93-1240
.1245	5/8	2-1/4	.1245	4	93-1245
.1250	5/8	2-1/4	.1250	4	93-1250
.1255	5/8	2-1/4	.1255	4	93-1255
.1700	7/8	2-3/4	.1700	4	93-1700
.1719	7/8	2-3/4	.1719	4	93-1719
.1725	7/8	2-3/4	.1725	4	93-1725
.1860	7/8	2-3/4	.1860	4	93-1860
.1865	7/8	2-3/4	.1865	4	93-1865
.1870	7/8	2-3/4	.1870	4	93-1870
.1875	7/8	2-3/4	.1875	4	93-1875
.1880	7/8	2-3/4	.1880	4	93-1880
.1885	7/8	2-3/4	.1885	4	93-1885
.2025	1”	3”	.2025	4	93-2025
.2031	1”	3”	.2031	4	93-2031
.2035	1”	3”	.2035	4	93-2035
.2330	1”	3”	.2330	4	93-2330
2340	1”	3”	.2340	4	93-2340
.2344	1”	3”	.2344	4	93-2344
.2350	1”	3”	.2350	4	93-2350
.2470	1”	3”	.2470	4	93-2470
.2475	1”	3”	.2475	4	93-2475
.2480	1”	3”	.2480	4	93-2480
.2485	1”	3”	.2485	4	93-2485
.2490	1”	3”	.2490	4	93-2490
.2495	1”	3”	.2495	4	93-2495
.2500	1”	3”	.2500	4	93-2500
.2505	1”	3”	.2505	4	93-2505
.2510	1”	3”	.2510	4	93-2510
.2515	1”	3”	.2515	4	93-2515
.2520	1”	3”	.2520	4	93-2520
.2650	1-1/8”	3-1/4	.2650	6	93-2650
.2656	1-1/8”	3-1/4	.2656	6	93-2656
.2660	1-1/8”	3-1/4	.2660	6	93-2660
.2800	1-1/8”	3-1/4	.2800	6	93-2800
.2812	1-1/8”	3-1/4	.2812	6	93-2812
.2820	1-1/8”	3-1/4	.2820	6	93-2820
.2960	1-1/8”	3-1/4	.2960	6	93-2960
.2965	1-1/8”	3-1/4	.2965	6	93-2965
.2969	1-1/8”	3-1/4	.2969	6	93-2969
.2975	1-1/8”	3-1/4	.2975	6	93-2975

CUTTING DIA	FLUTE LENGTH	O.A.L.	SHANK SIZE	# OF FLUTES	ORDER EDP #
.3115	1-1/8	3-1/4	.3115	6	93-3115
.3120	1-1/8	3-1/4	.3120	6	93-3120
.3125	1-1/8	3-1/4	.3125	6	93-3125
.3130	1-1/8	3-1/4	.3130	6	93-3130
.3135	1-1/8	3-1/4	.3135	6	93-3135
.3275	1-1/4	3-1/2	.3275	6	93-3275
.3281	1-1/4	3-1/2	.3281	6	93-3281
.3285	1-1/4	3-1/2	.3285	6	93-3285
.3430	1-1/4	3-1/2	.3430	6	93-3430
.3435	1-1/4	3-1/2	.3435	6	93-3435
.3438	1-1/4	3-1/2	.3438	6	93-3438
.3445	1-1/4	3-1/2	.3445	6	93-3445
.3590	1-1/4	3-1/2	.3590	6	93-3590
.3594	1-1/4	3-1/2	.3594	6	93-3594
.3600	1-1/4	3-1/2	.3600	6	93-3600
.3730	1-1/4	3-1/2	.3730	6	93-3730
.3735	1-1/4	3-1/2	.3735	6	93-3735
.3740	1-1/4	3-1/2	.3740	6	93-3740
.3745	1-1/4	3-1/2	.3745	6	93-3745
.3750	1-1/4	3-1/2	.3750	6	93-3750
.3755	1-1/4	3-1/2	.3755	6	93-3755
.3760	1-1/4	3-1/2	.3760	6	93-3760
.3900	1-1/4	3-1/2	.3900	6	93-3900
.3906	1-1/4	3-1/2	.3906	6	93-3906
.3910	1-1/4	3-1/2	.3910	6	93-3910
.4060	1-1/4	3-1/2	.4060	6	93-4060
.4062	1-1/4	3-1/2	.4062	6	93-4062
.4070	1-1/4	3-1/2	.4070	6	93-4070
.4210	1-3/8	4”	.4210	6	93-4210
.4219	1-3/8	4”	.4219	6	93-4219
.4225	1-3/8	4”	.4225	6	93-4225
.4365	1-3/8	4”	.4365	6	93-4365
.4370	1-3/8	4”	.4370	6	93-4370
.4375	1-3/8	4”	.4375	6	93-4375
.4380	1-3/8	4”	.4380	6	93-4380
.4525	1-3/8	4”	.4525	6	93-4525
.4531	1-3/8	4”	.4531	6	93-4531
.4540	1-3/8	4”	.4540	6	93-4540
.4680	1-3/8	4”	.4680	6	93-4680
.4688	1-3/8	4”	.4688	6	93-4688
.4695	1-3/8	4”	.4695	6	93-4695
.4840	1-1/2	4”	.4840	6	93-4840
.4844	1-1/2	4”	.4844	6	93-4844
.4850	1-1/2	4”	.4850	6	93-4850
.4980	1-1/2	4”	.4980	6	93-4980
.4985	1-1/2	4”	.4985	6	93-4985
.4990	1-1/2	4”	.4990	6	93-4990
.4995	1-1/2	4”	.4995	6	93-4995
.5000	1-1/2	4”	.5000	6	93-5000
.5005	1-1/2	4”	.5005	6	93-5005
.5010	1-1/2	4”	.5010	6	93-5010

APPLICATION: SPOTTING ON IRREGULAR OR ROUND SURFACES, COUNTER BORING AND, FLAT BOTTOM REAMING

DIAMETER +.000/-.001	ORDER EDP #	LENGTH OF FLUTE	O.A.L.	SHANK DIA
3/32 .094	85-0941	3/8	2”	1/8
1/8 .125	85-1251	3/8	2”	1/8
9/64 .140	85-1401	1/2	2-1/2”	3/16
5/32 .156	85-1561	1/2	2-1/2”	3/16
11/64 .171	85-1711	1/2	2-1/2”	3/16
3/16 .187	85-1871	1/2	2-1/2”	3/16
13/64 .203	85-2031	5/8	2-1/2”	1/4
7/32 .219	85-2191	5/8	2-1/2”	1/4
15/64 .234	85-2341	5/8	2-1/2”	1/4
1/4 .250	85-2501	5/8	2-1/2”	1/4
17/64 .265	85-2651	11/16	2-1/2”	5/16
9/32 .281	85-2811	11/16	2-1/2”	5/16
19/64 .297	85-2971	11/16	2-1/2”	5/16
5/16 .312	85-3121	11/16	2-1/2”	5/16
21/64 .328	85-3281	3/4	2-1/2”	3/8
11/32 .343	85-3431	3/4	2-1/2”	3/8
23/64 .359	85-3591	3/4	2-1/2”	3/8
3/8 .375	85-3751	3/4	2-1/2”	3/8
25/64 .390	85-3901	7/8	3”	7/16
13/32 .406	85-4061	7/8	3”	7/16
27/64 .421	85-4211	7/8	3”	7/16
7/16 .437	85-4371	7/8	3”	7/16
29/64 .453	85-4531	1	3”	1/2
15/32 .469	85-4691	1	3”	1/2
31/64 .484	85-4841	1	3”	1/2
1/2 .500	85-5001	1	3”	1/2
33/64 .515	85-5151	1-1/8	3”	9/16
17/32 .531	85-5311	1-1/8	3”	9/16
35/64 .547	85-5471	1-1/8	3”	9/16
9/16 .562	85-5621	1-1/8	3”	9/16
37/64 .578	85-5781	1-3/16	3-1/2”	5/8
19/32 .594	85-5941	1-3/16	3-1/2”	5/8
39/64 .625	85-6091	1-3/16	3-1/2”	5/8
5/8 .641	85-6251	1-3/16	3-1/2”	5/8
41/64 .656	85-6411	1-1/4	4”	3/4
21/32 .656	85-6561	1-1/4	4”	3/4
43/64 .672	85-6721	1-1/4	4”	3/4
11/16 .687	85-6871	1-1/4	4”	3/4
45/64 .703	85-7031	1-1/4	4”	3/4
23/32 .719	85-7191	1-1/4	4”	3/4
47/64 .734	85-7341	1-1/4	4”	3/4
3/4 .750	85-7501	1-1/4	4”	3/4

THESE COUNTERBORES ARE DESIGNED FOR USE ON A CNC THEY DONT HAVE A PILOT OR A PILOT HOLE.

SPECIAL SIZES AVAILABLE ON REQUEST

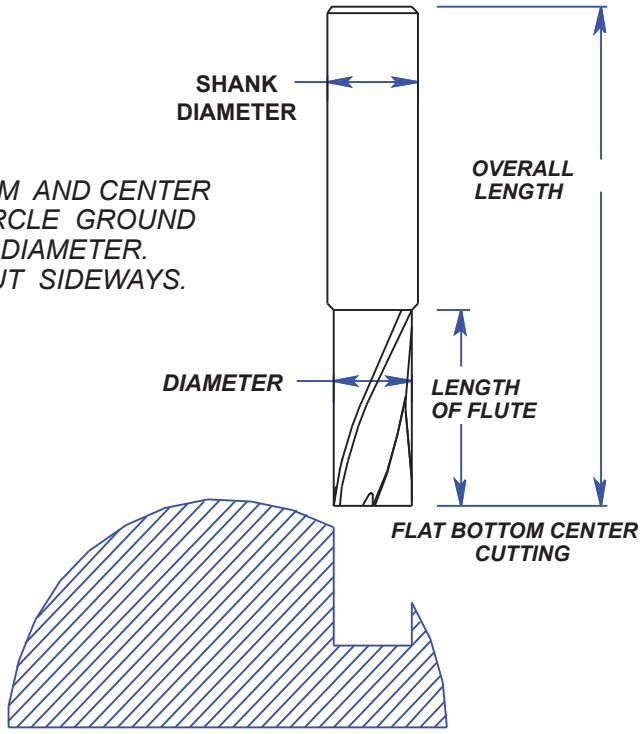
FLAT BOTTOM CENTER CUTTING
15° RIGHT HAND HELIX, RIGHT HAND CUT

APPLICATION :

1. **SPOTTING ON IRREGULAR OR ROUND SURFACES**
2. **COUNTER BORING**
3. **FLAT BOTTOM REAMING**
4. **STRAIGHTENING MISALIGNED OR OUT OF ROUND HOLES**



FLAT BOTTOM AND CENTER CUTTING. CIRCLE GROUND ON OUTSIDE DIAMETER. WILL NOT CUT SIDEWAYS.



HIGH PERFORMANCE ENDMILLS

SERIES 136 HIGH PERFORMANCE ENDMILL

APPLICATION: FOR CUTTING HARD TO MACHINE MATERIALS

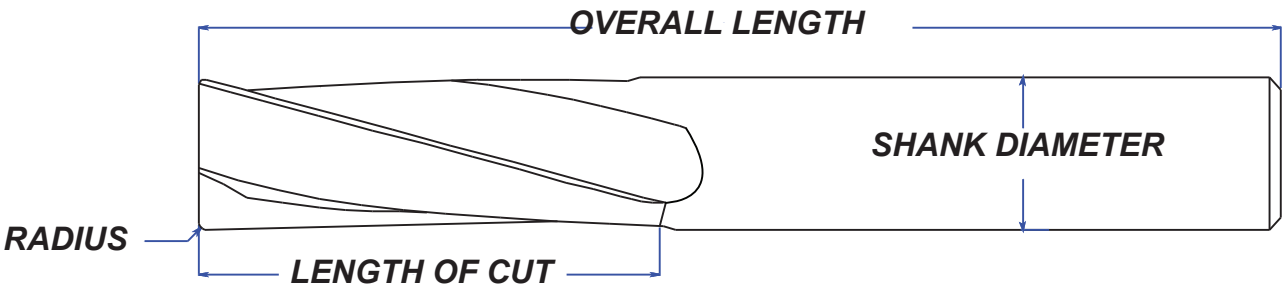


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FEATURES:

- *45° HELIX VARIABLE PITCH*
- *FULL ECCENTRIC RELIEF*
- *ALTIN COATING FOR LONG TOOL LIFE*
- *FOR CUTTING HARD TO MACHINE MATERIALS*
- *AVAILABLE IN MULTIPLE RADIUS SIZES*
- *CHATTER FREE CUTTING*

CUTTING DIA	SHANK SIZE	O.A.L.	LENGTH OF CUT	RADIUS	# OF FLUTES	DESCRIPTION	ORDER EDP #
1/8	1/8	1-1/2	1/4	0.0	3	.125x.250x.0R	136-0995
1/8	1/8	1-1/2	1/4	0.010	3	.125x.250x.010R	136-1000
1/8	1/8	1-1/2	1/2	0.0	3	.125x.500x.0R	136-1010
5/32	3/16	2	5/16	0.0	3	.156x.312x.0R	136-1015
5/32	3/16	2	5/16	0.010	3	.156x.312x.010R	136-1020
5/32	3/16	2	9/16	0.0	3	.156x.562x.0R	136-1025
5/32	3/16	2	9/16	0.010	3	.156x.562x.010R	136-1030
3/16	3/16	1-1/2	5/16	0.0	3	.187x.312x.0R	136-1038
3/16	3/16	1-1/2	5/16	0.010	3	.187x.312x.010R	136-1040
3/16	3/16	2	9/16	0.0	3	.187x.562x.0R	136-1045
3/16	3/16	2	9/16	0.010	3	.187x.562x.010R	136-1050
3/16	3/16	2	9/16	0.020	3	.187x.562x.020R	136-1060
7/32	1/4	2	1/2	0.015	3	.218x.500x.015R	136-1070
7/32	1/4	2	1/2	0.0	3	.218x.500x.0R	136-1075
7/32	1/4	2-1/2	3/4	0.015	3	.218x.750x.015R	136-1080
1/4	1/4	2	1/2	0.0	3	.250x.500x.0R	136-1085
1/4	1/4	2	1/2	0.015	3	.250x.500x.015R	136-1090
1/4	1/4	2-1/2	3/4	0.0	3	.250x.750x.0R	136-1095
1/4	1/4	2-1/2	3/4	0.015	3	.250x.750x.015R	136-1100
1/4	1/4	2-1/2	3/4	0.030	3	.250x.750x.030R	136-1110
1/4	1/4	3”	1-1/8	.015	3	.250x1.125x.015R	136-1120
9/32	5/16	2	1/2	0.0	5	.281x.500x.0R	136-1135
9/32	5/16	2	1/2	0.015	5	.281x.500x.015R	136-1140
9/32	5/16	2-1/2	3/4	0.015	5	.281x.750x.015R	136-1150
5/16	5/16	2	1/2	0.0	5	.312x.500x.0R	136-1155
5/16	5/16	2	1/2	0.015	5	.312x.500x.015R	136-1160
5/16	5/16	2-1/2	13/16	0.0	5	.312x.812x.0R	136-1170
5/16	5/16	2-1/2	13/16	0.015	5	.312x.812x.015R	136-1180
5/16	5/16	2-1/2	13/16	0.030	5	.312x.812x.030R	136-1190
11/32	3/8	2-1/2	9/16	0.0	5	.343x.562x.0R	136-1210
11/32	3/8	2-1/2	9/16	0.015	5	.343x.562x.015R	136-1220
11/32	3/8	2-1/2	7/8	0.0	5	.343x.875x.0R	136-1225
11/32	3/8	2-1/2	7/8	0.015	5	.343x.875x.015R	136-1230
3/8	3/8	2	9/16	0.0	5	.375x.562x.0R	136-1235
3/8	3/8	2	9/16	0.015	5	.375x.562x.015R	136-1240
3/8	3/8	2	9/16	0.030	5	.375x562x.030R	136-1250
3/8	3/8	2-1/2	1	0.0	5	.375x1.00x.0R	136-1265
3/8	3/8	2-1/2	1	0.015	5	.375x1.00x.015R	136-1270
3/8	3/8	2-1/2	1	0.030	5	.375x1.00x.030R	136-1280
3/8	3/8	2-1/2	1	0.062	5	.375x1.00x.062R	136-1290
3/8	3/8	3	1-1/4	0.0	5	.375x1.250x.0R	136-1305
3/8	3/8	3	1-1/4	0.015	5	.375x1.250x.015R	136-1310
3/8	3/8	3	1-1/4	0.030	5	.375x1.250x.030R	136-1320
3/8	3/8	4	1-1/2	0.0	5	.375x1.500x.0R	136-1335
3/8	3/8	4	1-1/2	0.015	5	.375x1.500x.015R	136-1340
3/8	3/8	4	1-1/2	0.030	5	.375x1.500x.030R	136-1350
3/8	3/8	4	1-1/2	0.0	5	.375x2.500x.0R	136-1365
7/16	7/16	2-1/2	9/16	0.0	5	.437x.562x.0R	136-1395



SERIES 136 HIGH PERFORMANCE ENDMILL

HIGH PERFORMANCE ENDMILLS

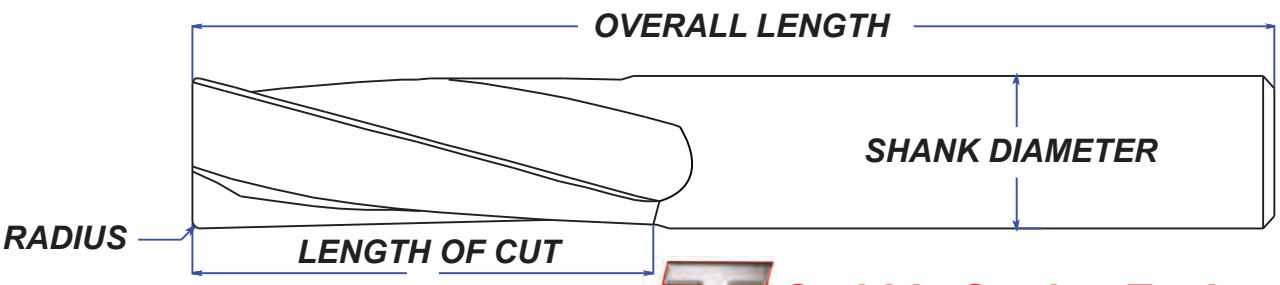
APPLICATION: FOR CUTTING HARD TO MACHINE MATERIALS



FEATURES:

- 45° HELIX VARIABLE PITCH
- FULL ECCENTRIC RELIEF
- ALTIN COATING FOR LONG TOOL LIFE
- FOR CUTTING HARD TO MACHINE MATERIALS
- AVAILABLE IN MULTIPLE RADIUS SIZES
- CHATTER FREE CUTTING

CUTTING DIA	SHANK SIZE	O.A.L.	LENGTH OF CUT	RADIUS	# OF FLUTES	DESCRIPTION	ORDER EDP #
7/16	7/16	2-1/2	9/16	0.015	5	.437x.562x.015R	136-1400
7/16	7/16	2-1/2	1	0.0	5	.437x1.00x.0R	136-1415
7/16	7/16	2-1/2	1	0.015	5	.437x1.00x.015R	136-1420
7/16	7/16	2-1/2	2	0.0	5	.437x2.00x.0R	136-1445
1/2	1/2	2-1/2	5/8	0.0	5	.500x.625x.0R	136-1465
1/2	1/2	2-1/2	5/8	0.010	5	.500x.625x.010R	136-1470
1/2	1/2	2-1/2	5/8	0.015	5	.500x.625x.015R	136-1480
1/2	1/2	2-1/2	5/8	0.030	5	.500x.625x.030R	136-1490
1/2	1/2	2-1/2	5/8	0.045	5	.500x.625x.045R	136-1500
1/2	1/2	2-1/2	5/8	0.062	5	.500x.625x.062R	136-1510
1/2	1/2	2-1/2	5/8	0.094	5	.500x.625x.094R	136-1520
1/2	1/2	2-1/2	5/8	0.125	5	.500x.625x.125R	136-1530
1/2	1/2	3	1	0.0	5	.500x1.00x.0R	136-1535
1/2	1/2	3	1	0.015	5	.500x1.00x.015R	136-1540
1/2	1/2	3	1	0.030	5	.500x1.00x.030R	136-1550
1/2	1/2	3	1	0.045	5	.500x1.00x.045R	136-1560
1/2	1/2	3	1	0.062	5	.500x1.00x.062R	136-1570
1/2	1/2	3	1	0.094	5	.500x1.00x.094R	136-1580
1/2	1/2	3	1	0.125	5	.500x1.00x.125R	136-1590
1/2	1/2	3	1-1/4	0.0	5	.500x1.25x.0R	136-1595
1/2	1/2	3	1-1/4	0.015	5	.500x1.25x.015R	136-1610
1/2	1/2	3	1-1/4	0.030	5	.500x1.25x.030R	136-1620
1/2	1/2	3	1-1/4	0.062	5	.500x1.25x.062R	136-1640
1/2	1/2	4	1-1/2	0.015	5	.500x1.500x.0R	136-1645
1/2	1/2	4	1-1/2	0.015	5	.500x1.500x.015	136-1670
1/2	1/2	4	1-1/2	0.030	5	.500x1.500x.030R	136-1680
1/2	1/2	4	1-1/2	0.062	5	.500x1.500x.062R	136-1690
1/2	1/2	4	2	0.0	5	.500x2.00x.0R	136-1695
1/2	1/2	4	2	0.015	5	.500x2.00x.015R	136-1720
1/2	1/2	4	2	0.030	5	.500x2.00x.030R	136-1730
1/2	1/2	4	2	0.062	5	.500x2.00x.062R	136-1750
1/2	1/2	4	2	0.125	5	.500x2.00x.125R	136-1770
5/8	5/8	3	3/4	0.0	5	.625x.750x.0R	136-1775
5/8	5/8	3	3/4	0.062	5	.625x.750x.062R	136-1780
5/8	5/8	3	3/4	0.125	5	.625x.750x.125R	136-1800
5/8	5/8	3-1/2	1-5/8	0.0	5	.625x1.625x.0R	136-1805
5/8	5/8	3-1/2	1-5/8	0.030	5	.625x1.625x.030R	136-1820
5/8	5/8	3-1/2	1-5/8	0.062	5	.625x1.625x.062R	136-1830
5/8	5/8	3-1/2	1-5/8	0.125	5	.625x1.625x.125R	136-1850
3/4	3/4	3	7/8	0.0	5	.750x.875x.0R	136-1855
3/4	3/4	3	7/8	0.030	5	.750x.875x.030R	136-1920
3/4	3/4	3	7/8	0.062	5	.750x.875x.062R	136-1940
3/4	3/4	3	7/8	0.125	5	.750x.875x.125R	136-1960
3/4	3/4	4	1-5/8	0.0	5	.750x1.625x.0R	136-1965
3/4	3/4	4	1-5/8	0.030	5	.750x1.625x.030R	136-1980
3/4	3/4	4	1-5/8	0.062	5	.750x1.625x.062R	136-2010
1”	1”	4	1-1/4	0.0	5	1.00x1.25x.0R	136-2165
1”	1”	4	1-1/4	0.030	5	1.00x1.25x.030R	136-2170
1”	1”	4	1-1/4	0.062	5	1.00x1.25x.062R	136-2180
1”	1”	4	1-1/4	0.125	5	1.00x1.25x.125R	136-2190



HIGH PERFORMANCE ENDMILLS

SERIES 112 HIGH PERFORMANCE ROUGHING ENDMILL

APPLICATION: ROUGHING STEEL & STAINLESS ALLOYS

ALTIN COATED FOR LONG LIFE

-3 FLUTE
-CORNER RADIUS
-VARIABLE PITCH
-CHIP BEAKERS
-50° HELIX ANGLE

CUTTING DIA	SHANK SIZE	O.A.L.	LENGTH OF CUT	RADIUS	DESCRIPTION	ORDER EDP #
1/4	1/4	2-1/2	3/4	0.015	.250x.750x.015R	112-1000
1/4	1/4	3”	1-1/8	0.015	.250x1.125x.015R	112-1005
5/16	5/16	2-1/2	13/16	0.015	.312x.812x.015R	112-1010
3/8	3/8	2-1/2	1”	0.015	.375x1.000x.015R	112-1015
3/8	3/8	3”	1-1/4	0.015	.375x1.250x.015R	112-1020
7/16	7/16	2-3/4	1”	0.015	.437x1.000x.015R	112-1025
7/16	7/16	4”	2”	0.015	.437x2.000x.015R	112-1030
1/2	1/2	3”	1-1/4	0.030	.500x1.250x.030R	112-1035
1/2	1/2	4”	1-1/2	0.030	.500x1.500x.030R	112-1040
1/2	1/2	4”	2”	0.030	.500x2.000x.030R	112-1045
5/8	5/8	3-1/2	1-5/8	0.030	.625x1.625x.030R	112-1050
5/8	5/8	5”	2-1/4	0.030	.625x2.250x.030R	112-1055
3/4	3/4	4”	1-5/8	0.030	.750x1.625x.030R	112-1060
3/4	3/4	5”	2-1/4	0.030	.750x2.250x.030R	112-1065
1”	1”	4”	2”	0.030	1.000x2.000x.030R	112-1070
1”	1”	6”	3”	0.030	1.000x2.000x.030R	112-1075



SERIES 116 HIGH PERFORMANCE BALL ENDMILL

APPLICATION: ROUGHING OR FINISHING STEEL & STAINLESS ALLOYS

ALTIN COATED FOR LONG LIFE

CUTTING DIA	SHANK SIZE	O.A.L.	LENGTH OF CUT	DESCRIPTION	ORDER EDP #
3/16	3/16	1-1/2	3/8	.187x.375	116-1000
3/16	3/16	2	9/16	.187x.562	116-1005
1/4	1/4	2	1/2	.250x.500	116-1010
1/4	1/4	2-1/2	3/4	.250x.750	116-1015
5/16	5/16	2	1/2	.312x.500	116-1020
5/16	5/16	2-1/2	13/16	.312x.812	116-1025
3/8	3/8	2	1/2	.375x.500	116-1030
3/8	3/8	2-1/2	7/8	.375x.875	116-1035
7/16	7/16	2-1/2	5/8	.437x.625	116-1040
7/16	7/16	2-3/4	1	.437x1.000	116-1045
1/2	1/2	2-1/2	5/8	.500x.625	116-1050
1/2	1/2	3	1	.500x1.000	116-1055
1/2	1/2	3	1-1/4	.500x1.250	116-1060
1/2	1/2	4	1-1/2	.500x1.500	116-1065
5/8	5/8	3	3/4	.625x.750	116-1070
5/8	5/8	3-1/2	1-1/4	.625x1.250	116-1075
3/4	3/4	3	1	.750x1.000	116-1080
3/4	3/4	4	1-1/2	.750x1.500	116-1085
1”	1”	4	1-1/2	1.000x1.500	116-1090

New!

- ***4 Flute***
- ***Ball Nose***
- ***Variable Pitch***
- ***45 ° Helix Angle***



APPLICATION: ROUGHING OR FINISHING ALUMINUM ALLOYS

New!

ZIRCONIUM COATED FOR LONGER LIFE AND PREVENTS CHIPS STICKING TO THE TOOL

- ***3 Flute***
- ***Variable Pitch***
- ***45 ° Helix Angle***

CUTTING DIA	SHANK SIZE	O.A.L.	LENGTH OF CUT	DESCRIPTION	ORDER EDP #
3/16	3/16	2”	3/8	.1875x.375	126-1000
3/16	3/16	2”	9/16	.1875x.562	126-1005
7/32	1/4	2”	1/2	.218x.500	126-1010
7/32	1/4	2-1/2	3/4	.218x.500	126-1015
1/4	1/4	2”	1/2	.250x500	126-1020
1/4	1/4	2-1/2	3/4	.250x.750	126-1025
1/4	1/4	3”	1-1/4	.250x1.250	126-1030
1/4	1/4	4”	1-1/12	.250x1.500	126-1035
9/32	5/16	2”	9/16	.281x.562	126-1040
9/32	5/16	2-1/2	13/16	.281x.812	126-1045
5/16	5/16	2”	1/2	.312x.500	126-1050
5/16	5/16	2-1/2	13/16	.312x.812	126-1055
5/16	5/16	3”	1-1/4	.312x1.250	126-1060
3/8	3/8	2”	5/8	.375x.625	126-1065
3/8	3/8	2-1/2	1”	.375x1.000	126-1070
3/8	3/8	3”	1-1/4	.375x1.250	126-1075
3/8	3/8	4”	1-1/2	.375x1.500	126-1080
7/16	3/8	4”	2”	.375x2.000	126-1085
7/16	7/16	2-1/2	5/8	.437x.625	126-1090
7/16	7/16	2-3/4	1”	.437x1.000	126-1095
1/2	7/16	4”	2”	.437x2.000	126-1100
1/2	1/2	2-1/2	5/8	.500x.625	126-1105
1/2	1/2	3”	1”	.500x1.000	126-1110
1/2	1/2	3”	1-1/4	.500x1.250	126-1115
1/2	1/2	4”	1-1/2	.500x1.500	126-1120
1/2	1/2	4”	2”	.500x2.000	126-1125
1/2	1/2	6”	3”	.500x3.000	126-1130
5/8	5/8	3”	3/4	.625x.750	126-1135
5/8	5/8	3-1/2	1-5/8	.625x.1.625	126-1140
5/8	5/8	5”	2-1/4	.625x2.250	126-1145
3/4	3/4	3”	1”	.750x1.000	126-1150
3/4	3/4	4”	1-5/8	.750x1.625	126-1155
3/4	3/4	5”	2-1/4	.750x2.250	126-1160
3/4	3/4	6”	3”	.750x3.000	126-1165
1”	1”	4”	1-1/2	1.000x1.500	126-1170
1”	1”	5”	2-1/4	1.000x2.250	126-1175
1”	1”	6”	3”	1.000x3.000	126-1180



SERIES 200 CARBIDE RODS

APPLICATION: CARBIDE BLANK

BLANK DIA	O.A.L.	ORDER EDP #
1/8	1”	200-1000
	1-1/4	200-1010
	1-1/2	200-1020
	2”	200-1030
	2-1/2	200-1040
	2-3/4	200-1050
	3”	200-1060
	4”	200-1070
3/16	1”	200-1080
	1-1/4	200-1090
	1-1/2	200-1100
	2”	200-1110
	2-1/2	200-1120
	2-3/4	200-1130
	3”	200-1140
	4”	200-1150
1/4	1”	200-1160
	1-1/4	200-1170
	1-1/2	200-1180
	2”	200-1190
	2-1/2	200-1200
	2-3/4	200-1210
	3”	200-1220
	4”	200-1230
	6”	200-1240
5/16	1”	200-1250
	1-1/4	200-1260
	1-1/2	200-1270
	2”	200-1280
	2-1/2	200-1290
	2-3/4	200-1300
	3”	200-1310
	4”	200-1320
	6”	200-1330
3/8	1”	200-1340
	1-1/4	200-1350
	1-1/2	200-1360
	2”	200-1370
	2-1/2	200-1380
	2-3/4	200-1390
	3”	200-1400
	4”	200-1410
	6”	200-1420

BLANK DIA	O.A.L.	ORDER EDP #
1/2	1”	200-1430
	1-1/4	200-1440
	1-1/2	200-1450
	2”	200-1460
	2-1/2	200-1470
	2-3/4	200-1480
	3”	200-1490
	4”	200-1500
	6”	200-1510
	12”	200-1520
5/8	1”	200-1530
	1-1/4	200-1540
	1-1/2	200-1550
	2”	200-1560
	2-1/2	200-1570
	2-3/4	200-1580
	3”	200-1590
	4”	200-1600
	6”	200-1610
	12”	200-1620
3/4	1”	200-1630
	1-1/4	200-1640
	1-1/2	200-1650
	2”	200-1660
	2-1/2	200-1670
	2-3/4	200-1680
	3”	200-1690
	4”	200-1700
	6”	200-1710
	12”	200-1720
1”	1”	200-1730
	1-1/4	200-1740
	1-1/2	200-1750
	2”	200-1760
	2-1/2	200-1770
	2-3/4	200-1780
	3”	200-1790
	4”	200-1800
	6”	200-1810
	12”	200-1820

New!



APPLICATION: CARBIDE BLANK

BLANK DIA	O.A.L.	ORDER EDP #
1/8	1”	210-1000
	1-1/4	210-1010
	1-1/2	210-1020
	2”	210-1030
	2-1/2	210-1040
	2-3/4	210-1050
	3”	210-1060
	4”	210-1070
3/16	1”	210-1080
	1-1/4	210-1090
	1-1/2	210-1100
	2”	210-1110
	2-1/2	210-1120
	2-3/4	210-1130
	3”	210-1140
	4”	210-1150
1/4	1”	210-1160
	1-1/4	210-1170
	1-1/2	210-1180
	2”	210-1190
	2-1/2	210-1200
	2-3/4	210-1210
	3”	210-1220
	4”	210-1230
	6”	210-1240
5/16	1”	210-1250
	1-1/4	210-1260
	1-1/2	210-1270
	2”	210-1280
	2-1/2	210-1290
	2-3/4	210-1300
	3”	210-1310
	4”	210-1320
	6”	210-1330
3/8	1”	210-1340
	1-1/4	210-1350
	1-1/2	210-1360
	2”	210-1370
	2-1/2	210-1380
	2-3/4	210-1390
	3”	210-1400
	4”	210-1410
	6”	210-1420

BLANK DIA	O.A.L.	ORDER EDP #
1/2	1”	210-1430
	1-1/4	210-1440
	1-1/2	210-1450
	2”	210-1460
	2-1/2	210-1470
	2-3/4	210-1480
	3”	210-1490
	4”	210-1500
	6”	210-1510
	12”	210-1520
5/8	1”	210-1530
	1-1/4	210-1540
	1-1/2	210-1550
	2”	210-1560
	2-1/2	210-1570
	2-3/4	210-1580
	3”	210-1590
	4”	210-1600
	6”	210-1610
	12”	210-1620
3/4	1”	210-1630
	1-1/4	210-1640
	1-1/2	210-1650
	2”	210-1660
	2-1/2	210-1670
	2-3/4	210-1680
	3”	210-1690
	4”	210-1700
	6”	210-1710
	12”	210-1720
1”	1”	210-1730
	1-1/4	210-1740
	1-1/2	210-1750
	2”	210-1760
	2-1/2	210-1770
	2-3/4	210-1780
	3”	210-1790
	4”	210-1800
	6”	210-1810
	12”	210-1820



CARBIDE ENDMILL SPEEDS AND FEEDS

SPEED AND FEEDS FOR CARBIDE ENDMILLS			ENDMILL DIAMETER FEED PER TOOTH (INCHES)		
MATERIAL	SPEED SURFACE FEET PER MINUTE		UP TO 1/4	UP TO 1/2	UP TO 1"
ALUMINUM / ALUMINUM ALLOYS	600-1300		.0002-.002	.002-.004	.004-.008
BRASS / SOFT BRONZE	400-700		.0005-.002	.002-.003	.003-.005
BRONZE / HIGH TENSILE	250-400		.001-.002	.002-.003	.004-.006
COPPER / COPPER ALLOYS	350-900		.0005-.002	0.002	.002-.006
IRON-CAST (SOFT)	200-500		.0005-.002	.002-.003	.003-.006
IRON-CAST (HARD)	100-450		.0003-.001	.0008-.002	.003-.005
IRON-DUCTILE	80-400		.0002-.001	.001-.002	.002-.006
IRON MALLEABLE	250-600		.001-.002	.001-.003	.003-.008
MAGNESIUM / MAGNESIUM ALLOYS	800-1400		.0005-.002	.002-.004	.004-.010
MOLYBDENUM	800-1100		.001-.002	.002-.004	.004-.008
MONEL / HIGH NICKEL STEEL	150-300		.0002-.001	.001-.002	.002-.004
NICKEL BASE HIGH TEMP ALLOYS	20-130		.0003-.0008	.0008-.001	.001-.002
PLASTICS	600-1200		.0006-.003	.003-.006	.006-.015
PLASTICS-GLASS FILLED	300-800		.0006-.003	.003-.004	.004-.012
REFRACTORY ALLOYS	80-400		.0002-.001	0.001	.001-.002
STEEL-LOW CARBON	250-550		.0002-.001	.001-.003	.003-.007
STEEL-MEDIUM CARBON	100-250		.0004-.0015	.0015-.002	.002-.005
STEEL-UP TO Rc35	150-250		.0005-.001	.001-.002	.002-.003
STEEL-Rc35 - Rc50	80-150		.0003-.0007	.0007-.001	.002-.003
STEEL-Rc50 - Rc60	25-120		.0002-.0005	.0005-.001	.001-.003
STEEL-MOLD	200-350		.0002-.001	.001-.002	.002-.006
STEEL TOOL	100-300		.0002-.001	.001-.002	.002-.006
STAINLESS STEEL-SOFT	250-400		.0002-.001	.001-.002	.002-.006
STAINLESS STEEL-HARD	50-250		.0002-.001	.001-.002	.001-.005
TITANIUM-SOFT	120-350		.0002-.001	.001-.002	.002-.006
TITANIUM-HARD	30-150		.0002-.0005	.0005-.001	.001-.004

PLUNGE OPERATIONS: *REDUCE FEED PER TOOTH 50-65%*
SLOTTING APPLICATIONS: *SURFACE SPEEDS (SFM) SHOULD BE REDUCED APPROXIMATELY 20% OF THE LOWEST VALUE*
LIGHT RADIAL: *DEPTHS OF CUT, THE HIGHER OF THE RECOMMENDED SURFACE SPEEDS (SFM) SHOULD BE USED*
GREATER RADIAL: *DEPTHS OF CUT (MORE THAN .5 X DIAMETER) THE LOWER RANGE OF SURFACE SPEEDS (SFM) SHOULD BE USED* ***AXIAL DEPTH OF CUT:*** *RECOMMENDATIONS ARE NOT TO EXCEED 1-1/2 TIMES THE DIAMETER. IF THIS CONDITION EXISTS,* ***CONVENTIONAL MILLING*** *SHOULD BE USED AND FEED PER TOOTH SHOULD BE REDUCED BY 50%*

PLEASE NOTE: *THE ABOVE RECOMMENDATIONS SHOULD BE CONSIDERED ONLY AS A STARTING POINT; "FINE TUNING" MAY BE REQUIRED IN ORDER TO MAXIMIZE PERFORMANCE*

SPEED AND FEEDS FOR BORING TOOLS				DEPTH OF CUT		
MATERIAL	TYPE	SPEED SURFACE FEET PER MINUTE	FEED INCHES PER REVOLUTION	INSERT BARS SERIES 12-17 PAGE 15-21	SOLID CARBIDE BARS OUR SERIES 10 PAGE 8-9	ALTIN COATED SOLID CARBIDE BARS OUR SERIES 18 PAGE 10
PLASTIC	TEFLON	500-600	.003-.006	.007	.012	.016
	NYLON	700-800	.001-.003	.007	.012	.016
	PHENOLIC	700-800	.001-.003	.007	.012	.016
	GLASS FILLED	700-800	.001-.003	.005	.012	.016
MAGNESIUM	AZ,AM,EZ,ZE,HK	750-1500	.005-.012	.008	.012	.016
ALUMINUM	2021 THRU 6061	700-1400	.005-.012	.008	.014	.018
COPPER	101-707	600-800	.003-.005	.008	.014	.016
	834-978	600-800	.003-.005	.008	.014	.016
BRASS		350-400	.001-.003	.006	.011	.012
BRONZE		300-400	.001-.002	.006	.011	.012
CAST IRON	GRAY	250-350	.004-.010	.007	.007	.009
	DUCTILE	250-350	.004-.010	.007	.007	.009
	MALLEABLE	250-350	.004-.010	.007	.007	.009
STEEL	1005-1029	100-300	.003-.007	.007	.014	.016
	1030-1055	100-300	.003-.007	.007	.014	.016
	1060-1095	150-400	.003-.005	.007	.014	.016
	10L45-10L50	300-500	.004-.006	.007	.014	.016
	12L13-12L15	300-500	.003-.005	.007	.014	.016
	41L30-41L50	200-400	.003-.005	.007	.014	.016
	4140-4150	150-400	.003-.005	.007	.014	.016
	4140 (35 HRC)	90-125	.001-.004	.004	.007	.008
	8617-8622	100-300	.002-.004	.007	.006	.007
	M1-M6	150-250	.003-.008	.006	.005	.006
	H10-H19	150-250	.003-.007	.006	.005	.006
	D2-D7	150-250	.004-.010	.006	.005	.006
	A2-A9, 01-07	150-250	.003-.008	.006	.005	.006
	W1, W2	150-250	.003-.008	.006	.006	.007
	M-50, 52100	300-400	.004-.010	.007	.006	.007
TITANIUM	TI-9AI-6V	90-250	.001-.003	.005	.008	.011
STAINLESS	201-385	100-250	.001-.004	.005	.008	.012
	405-446	100-250	.001-.004	.005	.008	.012
	15-5PH, 16-6PH, 14-4 PH	300-400	.002-.004	.005	.008	.012
NICKEL	NICKEL 200-300	100-250	.002-.005	.004	.007	.009
MONEY		80-120	.001-.003	.004	.007	.009
INCONEL		80-120	.001-.003	.004	.007	.009
WASPALOY		80-120	.001-.003	.004	.007	.009
HASTELLOY		80-120	.001-.003	.004	.007	.009

GROOVING TOOL SPEEDS AND FEEDS

SPEED AND FEEDS FOR GROOVING TOOLS			FEED INCHES PER REVOLUTION	FEED INCHES PER REVOLUTION	FEED INCHES PER REVOLUTION
MATERIAL	TYPE	SPEED SURFACE FEET PER MINUTE	CARBIDE INSERT OUR SERIES 26 PAGE 36	SOLID CARBIDE OUR SERIES 20 PAGE 22-23	ALTIN COATED SOLID CARBIDE OUR SERIES 22 PAGE 28-29
PLASTIC	TEFLON	350-400	.003-.006	.007	.012
	NYLON	350-600	.001-.003	.007	.012
	PHENOLIC	500-600	.001-.003	.007	.012
	GLASS FILLED	250-300	.001-.003	.005	.012
MAGNESIUM	AZ,AM,EZ,ZE,HK	850-1000	.005-.012	.008	.012
ALUMINUM	2021 THRU 6061	900-1000	.005-.012	.008	.014
COPPER	101-707	150-170	.003-.005	.008	.014
	834-978	500-600	.003-.005	.008	.014
BRASS		200-250	.001-.003	.006	.011
BRONZE		200-250	.001-.002	.006	.011
CAST IRON	GRAY	120-350	.004-.010	.007	.007
	DUCTILE	70-350	.004-.010	.007	.007
	MALLEABLE	75-550	.004-.010	.007	.007
STEEL	1005-1029	250-450	.003-.007	.007	.014
	1030-1055	110-370	.003-.007	.007	.014
	1060-1095	90-250	.003-.005	.007	.014
	10L45-10L50	130-450	.004-.006	.007	.014
	12L13-12L15	550-600	.003-.005	.007	.014
	41L30-41L50	65-350	.003-.005	.007	.014
	4140-4150	65-400	.003-.005	.007	.014
	4140 (35 HRC)	190-200	.001-.004	.004	.007
	8617-8622	100-400	.002-.004	.007	.006
	M1-M6	150-200	.003-.008	.006	.005
	H10-H19	65-250	.003-.007	.006	.005
	D2-D7	150-200	.004-.010	.006	.005
	A2-A9, 01-07	150-250	.003-.008	.006	.005
	W1, W2	150-250	.003-.008	.006	.006
	M-50, 52100	60-300	.004-.010	.007	.006
TITANIUM	TI-9AI-6V	90-100	.001-.003	.005	.008
STAINLESS	201-385	200-280	.001-.004	.005	.008
	405-446	250-300	.001-.004	.005	.008
	15-5PH, 16-6PH, 14-4 PH	100-200	.002-.004	.005	.008
NICKEL	NICKEL 200-300	200-250	.002-.005	.004	.007
MONEY		100-150	.001-.003	.004	.007
INCONEL		40-50	.001-.003	.004	.007
WASPALOY		70-100	.001-.003	.004	.007
HASTELLOY		70-90	.001-.003	.004	.007

NOTE : ALL SPEEDS AND FEEDS LISTED HERE ARE PROVIDED FOR REFERENCE ONLY.

$$\frac{RPM = SFM \times 12}{(\P) \times DIAMETER}$$

SPEED AND FEEDS FOR KEY CUTTERS		
MATERIAL	TYPE	SPEED SURFACE FEET PER MINUTE
PLASTIC	TEFLON	200
	NYLON	200
	PHENOLIC	180
	GLASS FILLED	150
MAGNESIUM	AZ,AM,EZ,ZE,HK	300
ALUMINUM	2021 THRU 6061	300
COPPER	101-707	100
	834-978	200
BRASS		250
BRONZE		230
CAST IRON	GRAY	180
	DUCTILE	140
	MALLEABLE	100
STEEL	1005-1029	180
	1030-1055	180
	1060-1095	170
	10L45-10L50	165
	12L13-12L15	160
	41L30-41L50	150
	4140-4150	140
	4140 (35 HRC)	130
	8617-8622	120
	M1-M6	110
	H10-H19	100
	D2-D7	90
	A2-A9, 01-07	80
	W1, W2	70
	M-50, 52100	60
TITANIUM	TI-9AI-6V	90
STAINLESS	201-385	100
	405-446	110
	15-5PH, 16-6PH, 14-4 PH	120
NICKEL	NICKEL 200-300	80
MONEY		80
INCONEL		80
WASPALOY		80
HASTELLOY		80

FORMULA FOR COMPUTING SPINDLE SPEED IS.

SURFACE FEET PER MINUTE FACTOR X 4 = ___?

__?__DIVIDED BY DIAMETER OF CUTTER =____RPM

EXAMPLE CUTTING ALUMINUM WITH A 3/4" KEY CUTTER

300 X 4 = 1200 divided by .750 = 1600 RPM

SURFACE FEET **MULTIPLIER** **CUTTER DIAMETER**

FORMULA FOR COMPUTING TABLE SPEED IS.

.001 X NUMBER OF TEETH IN CUTTER X RPM

EXAMPLE CUTTING ALUMINUM WITH A 3/4" KEY CUTTER

.001 X 10 X 1600 = 16

MULTIPLIER **NUMBER OF TEETH** **RPM** **INCHES PER MINUTE**

NOTE : ALL SPEEDS AND FEEDS LISTED HERE ARE PROVIDED FOR REFERENCE ONLY.

SPEED AND FEEDS FOR THREADING TOOLS				
MATERIAL	TYPE	SPEED SURFACE FEET PER MINUTE	FEED INFEED PER PASS 1ST PASS	FEED INFEED PER PASS LAST PASS
PLASTIC	TEFLON	250-400	.015	.001
	NYLON	250-400	.015	.001
	PHENOLIC	250-400	.015	.001
	GLASS FILLED	250-400	.015	.001
MAGNESIUM	AZ,AM,EZ,ZE,HK	100-200	.020	.001
ALUMINUM	2021 THRU 6061	100-200	.020	.001
COPPER		100-200	.010	.001
BRASS		200-300	.010	.001
BRONZE		200-300	.010	.001
CAST IRON		85-140	.015	.0005
STEEL	1005-1029	50-150	.015	.001
	1030-1055	50-150	.015	.001
	1060-1095	50-150	.015	.001
	10L45-10L50	50-150	.015	.001
	12L13-12L15	50-150	.015	.001
	41L30-41L50	50-150	.015	.001
	4140-4150	50-150	.015	.001
	4140 (35 HRC)	50-150	.015	.001
	8617-8622	50-150	.015	.001
	M1-M6	50-150	.015	.001
	H10-H19	50-150	.015	.001
	D2-D7	50-150	.015	.001
	A2-A9, 01-07	50-150	.015	.001
	W1, W2	50-150	.015	.001
	M-50, 52100	50-150	.015	.001
TITANIUM	TI-9AI-6V	40-65	.020	.0005
STAINLESS	405-446	65-100	.015	.001
	15-5PH, 16-6PH, 14-4 PH	65-100	.015	.001
NICKEL	NICKEL 200-300	40-100	.015	.001

SINGLE POINT THREADING ROUGHING INFEED DEPTH PER PASS

THREADS PER INCH	8	10	11	12	13	14	16	18	20	24	28	32	36	40
PASS 1	.0171	.0148	.0148	.0134	.0124	.0114	.0110	.0110	.0099	.0094	.0079	.0083	.0072	.0083
PASS 2	.0283	.0243	.0243	.0219	.0202	.0189	.0179	.0178	.0159	.0150	.0126	.0130	.0113	.0128
PASS 3	.0372	.0318	.0318	.0287	.0264	.0244	.0233	.0231	.0206	.0194	.0163	.0167	.0145	
PASS 4	.0449	.0383	.0383	.0345	.0317	.0293	.0279	.0276	.0246	.0231	.0194			
PASS 5	.0517	.0441	.0441	.0396	.0364	.0337	.0321	.0316	.0282					
PASS 6	.0580	.0494	.0494	.0443	.0407	.0376	.0358							
PASS 7	.0637	.0543	.0543	.0486	.0447	.0413								
PASS 8	.0691	.0588	.0588											
PASS 9	.0742													

IN MOST CASES A FINISH OR SPRING PASS IS RECOMMENDED.

FORMULA FOR CONVERTING SURFACE FEET PER MINUTE (SFM) TO REVOLUTIONS PER MINUTE (RPM)

NOTE : ALL SPEEDS AND FEEDS LISTED HERE ARE PROVIDED FOR REFERENCE ONLY.

$$RPM = \frac{SFM \times 12}{(\P) \times DIAMETER}$$

SPEED AND FEEDS FOR FACE GROOVING			
MATERIAL	TYPE	SPEED SURFACE FEET PER MINUTE	FEED INCHES PER REVOLUTION
PLASTIC	TEFLON	350-400	.003-.006
	NYLON	350-600	.001-.003
	PHENOLIC	500-600	.001-.003
	GLASS FILLED	250-300	.001-.003
MAGNESIUM	AZ,AM,EZ,ZE,HK	850-1000	.001-.002
ALUMINUM	2021 THRU 6061	900-1000	.002-.003
COPPER	101-707	450-500	.002-.003
	834-978	500-600	.001-.002
BRASS		200-250	.001-.002
BRONZE		200-250	.001-.002
CAST IRON	GRAY	120-350	.002-.003
	DUCTILE	70-350	.002-.003
	MALLEABLE	75-550	.002-.003
STEEL	1005-1029	250-450	.002-.003
	1030-1055	110-370	.001-.003
	1060-1095	90-250	.001-.003
	10L45-10L50	130-450	.002-.003
	12L13-12L15	550-600	.002-.003
	41L30-41L50	65-350	.002-.003
	4140-4150	65-400	.002-.003
	4140 (35 HRC)	190-200	.001-.003
	8617-8622	100-400	.001-.002
	M1-M6	150-200	.001-.002
	H10-H19	65-250	.001-.002
	D2-D7	150-200	.001-.002
	A2-A9, 01-07	150-250	.001-.002
	W1, W2	150-250	.001-.002
	M-50, 52100	60-300	.001-.002
TITANIUM	TI-9AI-6V	90-100	.001-.002
STAINLESS	201-385	200-280	.001-.002
	405-446	250-300	.001-.002
	15-5PH, 16-6PH, 14-4 PH	100-200	.001-.002
NICKEL	NICKEL 200-300	200-250	.001-.002
MONEL		100-150	.001-.002
INCONEL		40-50	.001-.002
WASPALOY		70-100	.001-.002
HASTELLOY		70-90	.001-.002

NOTE : ALL SPEEDS AND FEEDS LISTED HERE ARE PROVIDED FOR REFERENCE ONLY.

$$\frac{RPM = SFM \times 12}{(\P) \times DIAMETER}$$

TERMS AND CONDITIONS

Technical Assistance

Any technical assistance or application suggestions made by Internal Tool, Inc. personnel are only to assist the customer and in all cases use of such information is soley the customer's responsibility.

Shipping Terms

All shipments are FOB Internal Tool, Inc. La Verne CA. unless otherwise specified. Normally terms of payment on open accounts are 1% 10 NET 30 days from the date of invoice.

Past Due Accounts

Net accounts are considered past due at 30 days from the date of invoice. Past due accounts are subject to shipment and production hold at the discretion of Internal Tool Inc. Internal Tool, Inc. reserves the right to place any past due account on hold until all past due invoices are paid.

Return Policy

Any discrepancies in shipments received by you must be reported immediately. Such merchandise will not be accepted by us for return unless assigned a return authorization number. Any merchandise returned must be accompanied by a copy of our invoice indicating our return authorization number. Any merchandise that has been misused, abused, or is otherwise in non-saleable condition, will not be accepted for return by Internal tool, inc. Merchandise returned that is found to be in compliance with the aforementioned policy will be refunded the full purchase price, subject to a reasonable restocking charge. Merchandise will not be accepted for return after 30 days from receipt.

Credit Policy

Internal Tool, Inc. will not honor any credit that has not been expressly issued by Internal Tool, Inc. Any payments received that are found to be short paid for any reason without a credit issued by Internal Tool,Inc. will be promptly returned to the customer. The customer will have their account put on hold, or their shipping status changed to COD, at the discretion of Internal Tool, Inc. until the invoice has been cleared.

Telephone Orders

Telephone orders are accepted at the risk of the purchaser and shipments made before receipt of confirmation are for the special convenience of the customer. Internal Tool Inc. is not responsible for any shipping errors incurred as a result of a telephone order.

Special Orders

Orders for items marked as "specials" or items not stocked by Internal Tool, Inc. are considered special orders. Special items are subject to minimum order quantities and/or special handling charges with allowable over/under-run of 10%. All special orders are non-cancelable and special orders manufactured per print or instruction are non returnable.

Backordered Items

All Backordered items will be shipped in the same manner as the items on the original purchase order, unless specified in writing by the customer.

Shortage or Error

All claims for shortages or shipment error must be made immediately after receipt of shipment. invoice number and EDP number must be referenced. Our liability is limit fund of purchase price, at the discretion of Internal Tool Inc.

CALL GENERAL CUTTING TOOLS AT
PHONE: (847) 677-8770
EMAIL: INFO@GENERALCUTTINGTOOLS.COM
WWW.GENERALCUTTINGTOOLS.COM
6440 N Ridgeway Ave, Lincolnwood, IL 60712

SPECIALIZING IN CARBIDE CUTTING TOOLS
ITI
INTERNAL TOOL INC.

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