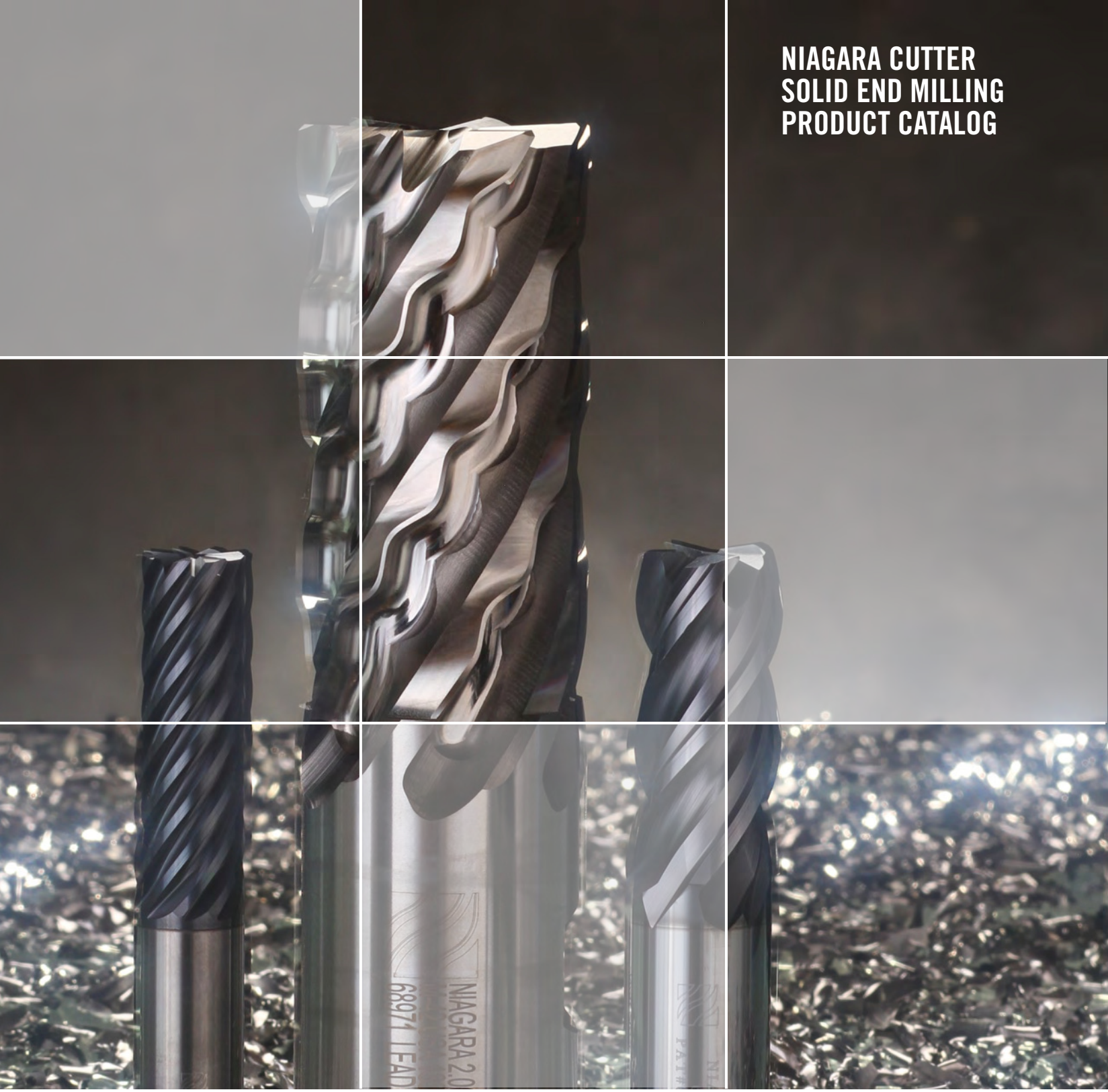


# SOLID END MILLING

## SOLID CARBIDE, HIGH SPEED STEEL & COBALT

Niagara Cutter

# YOUR SOLID TOOLING & TECHNOLOGY EXPERTS

### A TEST FOR OURSELVES & A PROMISE TO OUR CUSTOMERS

In the cutting tool industry, quality over time is assumed but not always achieved. No one in the industry pays more attention to the consistent quality of manufactured products than Niagara Cutter. Quality begins in our dedicated engineering, manufacturing and test facilities. Our in-plant machining laboratory, scanning electron microscope, and fully equipped and staffed metallurgical laboratory are just a few of the resources to help guarantee that the promise we make is the promise we keep … to provide the highest value cutting tools in the world.

**INNOVATION | TECHNOLOGY | QUALITY | SERVICE**

Niagara Cutter

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- **STR430M -** Metric 4 Flute with Radius ..... 24
- **STB430M -** Metric 4 Flute Ball-End ..... 25

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**RHC752 -** 3 Flute Coarse-Pitch Rougher for Aluminum ..... 330 - 331

**RHLC754 -** 3 Flute Coarse-Pitch Neck Style Rougher ..... 332

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**REM445 -** Multi-Flute Fine-Pitch Rougher ....344 - 346

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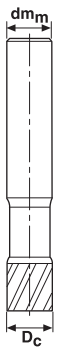
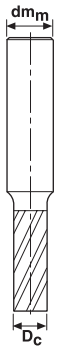
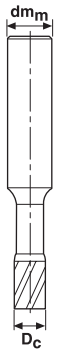
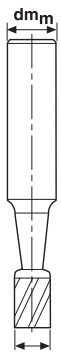
# TECHNICAL DATA

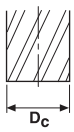
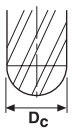
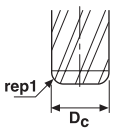
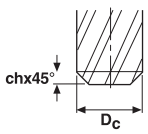
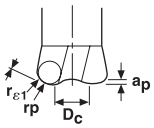
## END MILL PRODUCT CODE KEY

| Niagara Product Family | Cutting diameter | Tool shape | Length of shape | Tip shape | Type of shank | Number of flutes |
|---|---|---|---|---|---|---|
| STR440 - | 0.125 | D | 2 | R010 | .0 - | Z4 |

## TOOL SHAPE

| ($D_c = dm_m$) | | ($D_c < dm_m$) | | |
|---|---|---|---|---|
| |  |  |  |  |
| D Cylindrical | E Neck | F Step | G Step neck | J Taper neck |

## TIP SHAPE

| Sharp | Ball-nose | Corner radius | Chamfer | High-feed |
|---|---|---|---|---|
|  |  |  |  |  |
| S | B | R... | C | H |

Size of radius for convex and concave radius tipped products

000 = For metric products the tip shape is shown by a three-digit figure.
By dividing this figure by 100 you will get the actual corner radius size in millimeters.

.000 = For inch products the tip shape is shown by a dot, followed by a three-digit figure.
This figure actually shows the size of the corner radius in inch (e.g. R.100 would indicate a radius of 0.100 Inch).

## PRODUCT RANGE

Example:
ST = Stabilizer

For all products, see catalog.

## CUTTING DIAMETER

Metric = 3 digit code (in case of 4 digit code: xx.xx mm)
Imperial = a decimal followed by a 3 digit code
For example: (050 = metric, 5 mm)
(.500 = imperial, ½ inch)

## LENGTH OF SHAPE

| | |
|---|---|
| Stub | = 1 |
| S | = 2 |
| M | = 3 |
| L | = 4 |
| LR1 | = 5 |
| LR2 | = 6 |
| LR3 | = 7 |
| LR4 | = 8 |
| LR5 | = 9 |

## TYPE OF SHANK

Indicates the shank types that are available.
.0 = Cylindrical
.3 = Weldon
.5 = Whistle Notch
.7 = Combo (twist)

## NUMBER OF FLUTES

This figure indicates the number of flutes in the cutter.
For example;
Z2 = 2 flutes, Z6 = 6 flutes

| COATING | DESCRIPTION |
|---|---|
| AlCrN | AlCrN |
| AlTiN | AlTiN |
| CVDDIA | Diamond CVD |
| TiAlN | TiAlN |
| TiCN | TiCN |
| TiN | TiN |
| | Uncoated |

# TECHNICAL DATA

## THREAD MILLING PRODUCT CODE KEY

Niagara Product Family

Threads per inch (20TPI)
Thread pitch if metric (2.5)

Shank Size

**NTM400 - 1/4 X 20 UN - .500**

Thread Series and Diameter
M if metric (M10)

Thread Form
UN
NPT
NPTF
ISO

## FORMULAE

$a_e$ = Width of cut/radial depth of cut
$a_p$ = Depth of cut/axial depth of cut
f = Feed per revolution
$f_z$ = Feed per tooth
n = Rev/min RPM
$v_c$ = Surface footage/min
$v_f$ = Table travel (in/min)
$z_n$ = No of teeth

# SYMBOL KEY

## TOOL MATERIAL - SUBSTRATE

- SOLID CARBIDE
- PREMIUM PARTICLE METAL 8.5% COBALT
- M42 8% COBALT
- HSS HIGH SPEED STEEL

## TOOL END SHAPE

- SQUARE END
- BALL END
- CHAMFER 60°
- CHAMFER 90°
- CHAMFER 45°
- RADIUS
- HIGH FEED

## HELIX ANGLE

- HELIX 0°
- HELIX 10°
- HELIX 15°
- HELIX 20°
- HELIX 30°
- HELIX 35°
- HELIX 36°
- HELIX 37°
- HELIX 38°
- HELIX 40°
- HELIX 45°
- HELIX 60°
- HELIX VARIABLE

## END TEETH

- CENTER CUTTING
- NON CENTER CUTTING

## ROUGHING PROFILES

- CHIPBREAKER
- COARSE PITCH
- FINE PITCH
- TRUNCATED

# WORKPIECE MATERIAL CLASSIFICATION SECO MATERIAL GROUP (SMG)

### STEEL, FERRITIC AND MARTENSITIC STAINLESS STEEL

| ISO | SMG NO. | REPRESENTATIVE MATERIAL | DESCRIPTION | BHN | kc1.1 x 1000 lbf/in2 | $m_c$ |
|---|---|---|---|---|---|---|
| P | 1 | 1010 | Very soft carbon steels<br>Purely ferritic steels | < 135 | 196 | 0.21 |
| | 2 | 1140 | Free-cutting steels | 120 < 210 | 218 | 0.22 |
| | 3 | 1045 | Structural steels. Ordinary carbon steels with low to medium carbon content (<0,5%C) | 135 < 165 | 218 | 0.25 |
| | 4 | 4140 | Carbon steels with high carbon content (>0,5%C)<br>Medium hard steels for toughening. Ordinary low-alloy steels<br>Ferritic and martensitic stainless steels | 165 < 210 | 247 | 0.24 |
| | 5 | 4340 | Normal tool steels<br>Harder steels for toughening<br>Martensitic stainless steels | 210 < 270 | 276 | 0.24 |
| | 6 | D2 | Difficult tool steels<br>High-alloy steels with high hardness<br>Martensitic stainless steels | 270 < 360 | 290 | 0.24 |
| H | 7 | A128 Grade A | Difficult high-strength steels with 42 to 56 HRC hardness<br>Hardened steels from material group 3-6<br>Martensitic stainless steels | > 360 | 421 | 0.22 |

### FREE-CUTTING, AUSTENITIC AND DUPLEX STAINLESS STEEL

| | | | | | | |
|---|---|---|---|---|---|---|
| M | 8 | 304 | Easy-cutting stainless steels<br>Free-cutting stainless steels<br>Calcium-treated stainless steels | | 254 | 0.22 |
| | 9 | 316 | Moderately difficult stainless steels<br>Austenitic and duplex stainless steels | | 276 | 0.2 |
| | 10 | 310 | Difficult stainless steels<br>Austenitic and duplex stainless steels | | 297 | 0.2 |
| | 11 | 330 | Very difficult stainless steels<br>Austenitic and duplex stainless steels | | 312 | 0.2 |

### CAST IRON

| | | | | | | |
|---|---|---|---|---|---|---|
| K | 12 | 60-40-18 | Medium hard cast iron<br>Grey cast iron | | 167 | 0.22 |
| | 13 | A536 80-55-06 | Low-alloy cast iron<br>Malleable cast iron<br>Nodular cast iron | | 178 | 0.25 |
| | 14 | A536 100-70-03 | Moderately difficult alloy cast iron<br>Moderately difficult malleable cast iron<br>Nodular cast iron | | 196 | 0.28 |
| | 15 | A536 120-90-02 | Difficult high-alloy cast iron<br>Difficult malleable cast iron<br>Nodular cast iron | | 213 | 0.3 |

### OTHER MATERIALS

| | | | | | | |
|---|---|---|---|---|---|---|
| N | 16 | A380 | Aluminum alloys: Low Si | | 101 | 0.25 |
| | 17 | B390.0 | Aluminum alloys: High Si | | 101 | 0.27 |
| | 18 | CA937 | Copper alloys | | | |
| S | 19 | Discalloy | Fe-based superalloys | | | |
| | 20 | Stellite 21 | Co-based superalloys | | 377 | 0.24 |
| | 21 | Inconel 718 (bar, forge, ring) | Ni-based superalloys | | 479 | 0.24 |
| | 22 | Ti 6Al-4V (annealed) | Titanium alloys | | 210 | 0.23 |

$k_c$1.1-values with 0 degree effective cutting rake angle. For other rake angles, reduce the $k_c$1.1-value by 1% for every degree increase in the cutting rake angle and vice versa. Keep in mind that the BHN-value is only an aid in the selection of the material group when the material has been worked by rolling, drawing, heat treatment or other methods that increase the strength of the material.

# TOOL SELECTION GUIDE

We can help you to increase your productivity, enhance your performance and reduce your costs with the range of products we offer that cover the full spectrum of application and performance requirements.

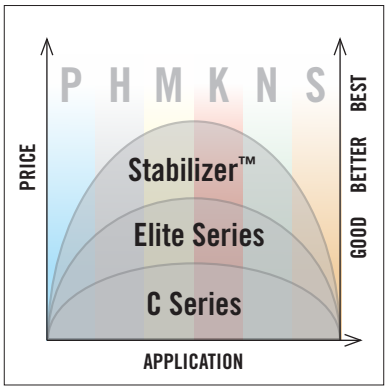
Although every situation is different, we can make some general suggestions on tool selection, per material and machining application. You will need to assess every opportunity and decide which tool is the best fit for your requirements.

## PROVIDING SOLUTIONS FOR ANY APPLICATION

**Stabilizer** series tools provide high performance in the general machining category. These tools should be applied where performance is critical. The Stabilizer family offers high performance and versatility in a variety of materials and operations. Both 4 and 5 flute versions with square, ball and radius ends are available with AlCrN and AlTiN coatings.

**Elite series** tools are a high performance solution for material specific machining applications where performance is important. These tools come with AlCrN and AlTiN coatings as standard and are available in multiple geometries and number of flutes to provide process optimization in various materials.

**Niagara C series** should be applied in basic general machining environments. These tools are offered in uncoated or TiAlN coated as standard. Square shoulder and ball end geometries with 2, 3 or 4 flute versions are available.




## RECOMMENDED TOOLING

| ISO GROUP | SELECTION | SLOTTING | | PROFILING | | COPY MILLING | |
|---|---|---|---|---|---|---|---|
| | | PRODUCT FAMILY | RANGE | PRODUCT FAMILY | RANGE | PRODUCT FAMILY | RANGE |
| P | 1ST CHOICE | STR430 | 1/8 - 1 INCH | S545 | 1/8 - 1 INCH | STB430 | 1/8 - 1 INCH |
| | 2ND CHOICE | S335 | 1/8 - 1 INCH | STS540 | 1/8 - 1 INCH | SB335 | 1/8 - 1 INCH |
| M | 1ST CHOICE | STR440 | 1/8 - 1 INCH | S545 | 1/8 - 1 INCH | STB440 | 1/8 - 1 INCH |
| | 2ND CHOICE | S335 | 1/8 - 1 INCH | STS540 | 1/8 - 1 INCH | SB335 | 1/8 - 1 INCH |
| K | 1ST CHOICE | STS430 | 1/8 - 1 INCH | STR430 | 1/8 - 1 INCH | STB430 | 1/8 - 1 INCH |
| | 2ND CHOICE | S335 | 1/8 - 1 INCH | S545 | 1/8 - 1 INCH | SB335 | 1/8 - 1 INCH |
| N | 1ST CHOICE | AN340 | 1/8 - 1 INCH | A345 | 1/8 - 1 INCH | AB245 | 1/8 - 1 INCH |
| | 2ND CHOICE | A245 | 1/8 - 1 INCH | A345R | 1/8 - 1 INCH | - | 1/8 - 1 INCH |
| S | 1ST CHOICE | STR440 | 1/8 - 1 INCH | STR540 | 1/8 - 1 INCH | STB440 | 1/8 - 1 INCH |
| | 2ND CHOICE | S335 | 1/8 - 1 INCH | STR440 | 1/8 - 1 INCH | SB335 | 1/8 - 1 INCH |
| H | 1ST CHOICE | MZN410R | 3/8 - 5/8 INCH | MZ645R | 1/8 - 1/2 INCH | MBZ215 | 1/16 - 1/2 INCH |
| | 2ND CHOICE | MZN510R | 1/8 - 1/2 INCH | MZ645 | 1/8 - 1/2 INCH | MB215 | 1/16 - 1/2 INCH |

# A FULL SERVICE SOLID TOOLING PROVIDER

## APPLICATION ENGINEERING

It starts with listening and learning and then culminates with a product that does not just perform, but outperforms that which previously existed. Between initial concept and final product there is application engineering, prototype development, exhaustive product testing and critical analysis – a truly innovative, and comprehensive, systems approach to world-class products.

Niagara Cutter has not only dedicated itself to this process of constant improvement, but is proud of its record of significant innovation and industry advancements.

## MANUFACTURING TECHNOLOGY

Niagara Cutter continues to invest heavily in automated processes, but in the final analysis, these machines are only as capable as their programming and maintenance allows and the final products are only as consistent as the parameters set by Niagara's machinists. It is in these areas where no machine can match the human contribution.

Niagara Cutter aggressively pursues continuous improvement, in its automated operations, and its people. Therefore, the perfect operation between man and machine at Niagara Cutter results in a company that is far greater than the sum of the parts in achieving consistency and accuracy.

## PRODUCTS - HIGH PERFORMANCE CUTTING TOOL SOLUTIONS

Niagara Cutter offers many product styles, including end mills, thread mills and special cutting tools to customer blue prints. With multiple material substrates (high-speed steel, cobalt, tungsten carbide), tool geometries and thin film coatings, we provide a complete product range to meet your cutting tool requirements.

Our job is not just producing millions of premium cutting tools; it is producing premium cutting tools specifically for your application and for absolute optimum performance, by asking the critical questions and quickly responding with the most effective solution.

# SOLID CARBIDE END MILLS

## HIGH PERFORMANCE STABILIZER™ SERIES

Stabilizer end mills are a cost effective, high performance solution for general machining applications. These solid carbide end mills feature our patented asymmetrical geometry which results in chatter reduction and increased productivity. Stabilizer end mills are offered with AlCrN and AlTiN coatings as standard. Standard geometries offered are four flute with square end, corner radius and ball end, as well as five flute square end and corner radius.

The GP series is for machining tool steels, carbon steels and alloy steels. The HT series is best suited for machining stainless steel and high temperature alloys. The HT series is offered with standard aerospace corner radii.

## ELITE A & S SERIES

Our Elite series of end mills feature specific geometries for ferrous or nonferrous materials, available in 0.125 - 1.25” diameters.

The A series is designed for aluminum and non ferrous materials and is available with two or three flutes in a variety of configurations. The S series provides high performance machining in steel, stainless steel and high temperature alloys. These end mills are offered in standard in three, five, six, seven and nine flutes.

The new seven and nine flute end mills are designed for high speed machining in titanium and stainless steels.

## GENERAL PURPOSE C SERIES

The C series end mills with two, three, or four flutes are available in square, corner radius or ball end, uncoated or with TiAlN as standard. This broad range of end mills is typical for job shop environments where one tool can handle a variety of applications.

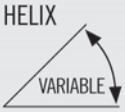
## MICRO

For the manufacturing of small components, Niagara Cutter has developed a range of miniature end mills. The Micro range delivers precision technology and quality in micro decimal diameters. These minature end mills are available in square end and ball end geometries with two and four flutes. All tools are 1/8” shank, 1-1/2” overall length.

# STABILIZER™ GP- STS430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- Weldon flat standard on shank sizes 3/8" and larger
- US Patent # 6,991,409
- Ideal for carbon steels, alloy steels, tool steels, cast iron, copper

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N60650 | STS430-0.125-D1-S.0-Z4 | 1/8 | 1/8 | 1/8 | 1-1/2 | 4 | AlTiN |
| N68200 | STS430-0.125-D1-S.0-Z4 | 1/8 | 1/8 | 1/8 | 1-1/2 | 4 | AlCrN |
| N60651 | STS430-0.125-D3-S.0-Z4 | 1/8 | 1/8 | 3/8 | 1-1/2 | 4 | AlTiN |
| N68201 | STS430-0.125-D3-S.0-Z4 | 1/8 | 1/8 | 3/8 | 1-1/2 | 4 | AlCrN |
| N60652 | STS430-0.156-F1-S.0-Z4 | 5/32 | 3/16 | 3/16 | 2 | 4 | AlTiN |
| N68202 | STS430-0.156-F1-S.0-Z4 | 5/32 | 3/16 | 3/16 | 2 | 4 | AlCrN |
| N60653 | STS430-0.156-F3-S.0-Z4 | 5/32 | 3/16 | 7/16 | 2 | 4 | AlTiN |
| N68203 | STS430-0.156-F3-S.0-Z4 | 5/32 | 3/16 | 7/16 | 2 | 4 | AlCrN |
| N60654 | STS430-0.188-D1-S.0-Z4 | 3/16 | 3/16 | 3/16 | 2 | 4 | AlTiN |
| N68204 | STS430-0.188-D1-S.0-Z4 | 3/16 | 3/16 | 3/16 | 2 | 4 | AlCrN |
| N60655 | STS430-0.188-D2-S.0-Z4 | 3/16 | 3/16 | 7/16 | 2 | 4 | AlTiN |
| N68205 | STS430-0.188-D2-S.0-Z4 | 3/16 | 3/16 | 7/16 | 2 | 4 | AlCrN |
| N60656 | STS430-0.219-F1-S.0-Z4 | 7/32 | 1/4 | 1/4 | 2 | 4 | AlTiN |
| N68206 | STS430-0.219-F1-S.0-Z4 | 7/32 | 1/4 | 1/4 | 2 | 4 | AlCrN |
| N60657 | STS430-0.219-F2-S.0-Z4 | 7/32 | 1/4 | 7/16 | 2-1/2 | 4 | AlTiN |
| N68207 | STS430-0.219-F2-S.0-Z4 | 7/32 | 1/4 | 7/16 | 2-1/2 | 4 | AlCrN |
| N60658 | STS430-0.250-D1-S.0-Z4 | 1/4 | 1/4 | 1/4 | 2 | 4 | AlTiN |
| N68208 | STS430-0.250-D1-S.0-Z4 | 1/4 | 1/4 | 1/4 | 2 | 4 | AlCrN |
| N60659 | STS430-0.250-D2-S.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlTiN |
| N68209 | STS430-0.250-D2-S.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlCrN |
| N60660 | STS430-0.281-F2-S.0-Z4 | 9/32 | 5/16 | 5/8 | 2-1/2 | 4 | AlTiN |
| N68210 | STS430-0.281-F2-S.0-Z4 | 9/32 | 5/16 | 5/8 | 2-1/2 | 4 | AlCrN |
| N60661 | STS430-0.313-D1-S.0-Z4 | 5/16 | 5/16 | 5/16 | 2 | 4 | AlTiN |
| N68211 | STS430-0.313-D1-S.0-Z4 | 5/16 | 5/16 | 5/16 | 2 | 4 | AlCrN |
| N60662 | STS430-0.313-D3-S.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | AlTiN |
| N68212 | STS430-0.313-D3-S.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | AlCrN |
| N60663 | STS430-0.344-F2-S.3-Z4 | 11/32 | 3/8 | 13/16 | 2-1/2 | 4 | AlTiN |
| N68213 | STS430-0.344-F2-S.3-Z4 | 11/32 | 3/8 | 13/16 | 2-1/2 | 4 | AlCrN |
| N60664 | STS430-0.375-D1-S.3-Z4 | 3/8 | 3/8 | 3/8 | 2 | 4 | AlTiN |
| N68214 | STS430-0.375-D1-S.3-Z4 | 3/8 | 3/8 | 3/8 | 2 | 4 | AlCrN |
| N60665 | STS430-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlTiN |
| N68215 | STS430-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlCrN |
| N60667 | STS430-0.438-D1-S.3-Z4 | 7/16 | 7/16 | 7/16 | 2-1/2 | 4 | AlTiN |
| N68217 | STS430-0.438-D1-S.3-Z4 | 7/16 | 7/16 | 7/16 | 2-1/2 | 4 | AlCrN |
| N60668 | STS430-0.438-D2-S.3-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | AlTiN |

**DISCOUNT CODE D43**

# STABILIZER™ GP- STS430

SOLID CARBIDE

HELIX VARIABLE

SQUARE END

CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- Weldon flat standard on shank sizes 3/8" and larger
- US Patent # 6,991,409
- Ideal for carbon steels, alloy steels, tool steels, cast iron, copper

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N68218 | STS430-0.438-D2-S.3-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | AlCrN |
| N60670 | STS430-0.500-D1-S.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | AlTiN |
| N68220 | STS430-0.500-D1-S.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | AlCrN |
| N60671 | STS430-0.500-D2-S.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | AlTiN |
| N68221 | STS430-0.500-D2-S.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | AlCrN |
| N57330 | STS430-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlTiN |
| N68222 | STS430-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlCrN |
| N60672 | STS430-0.563-D2-S.3-Z4 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 4 | AlTiN |
| N68223 | STS430-0.563-D2-S.3-Z4 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 4 | AlCrN |
| N60673 | STS430-0.625-D1-S.3-Z4 | 5/8 | 5/8 | 5/8 | 3 | 4 | AlTiN |
| N68224 | STS430-0.625-D1-S.3-Z4 | 5/8 | 5/8 | 5/8 | 3 | 4 | AlCrN |
| N60674 | STS430-0.625-D2-S.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlTiN |
| N68225 | STS430-0.625-D2-S.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlCrN |
| N60675 | STS430-0.750-D1-S.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | AlTiN |
| N68227 | STS430-0.750-D1-S.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | AlCrN |
| N60676 | STS430-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlTiN |
| N68228 | STS430-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlCrN |
| N57332 | STS430-0.813-F2-S.3-Z4 | 13/16 | 7/8 | 1-5/8 | 4 | 4 | AlTiN |
| N68229 | STS430-0.813-F2-S.3-Z4 | 13/16 | 7/8 | 1-5/8 | 4 | 4 | AlCrN |
| N57333 | STS430-0.875-D2-S.3-Z4 | 7/8 | 7/8 | 1-3/4 | 4 | 4 | AlTiN |
| N68230 | STS430-0.875-D2-S.3-Z4 | 7/8 | 7/8 | 1-3/4 | 4 | 4 | AlCrN |
| N57334 | STS430-0.938-F2-S.3-Z4 | 15/16 | 1 | 1-7/8 | 4 | 4 | AlTiN |
| N68231 | STS430-0.938-F2-S.3-Z4 | 15/16 | 1 | 1-7/8 | 4 | 4 | AlCrN |
| N60678 | STS430-1.000-D2-S.3-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | AlTiN |
| N68233 | STS430-1.000-D2-S.3-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | AlCrN |
| N57335 | STS430-1.000-D3-S.3-Z4 | 1 | 1 | 2 | 5 | 4 | AlTiN |
| N68234 | STS430-1.000-D3-S.3-Z4 | 1 | 1 | 2 | 5 | 4 | AlCrN |
| N57336 | STS430-1.250-D2-S.3-Z4 | 1-1/4 | 1-1/4 | 2-1/4 | 5 | 4 | AlTiN |
| N68235 | STS430-1.250-D2-S.3-Z4 | 1-1/4 | 1-1/4 | 2-1/4 | 5 | 4 | AlCrN |

**DISCOUNT CODE D43**

# STABILIZER™ GP- STR430

SOLID CARBIDE

HELIX VARIABLE

RADIUS

CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- Weldon flat standard on shank sizes 3/8" and larger
- US Patent # 6,991,409
- Ideal for carbon steels, alloy steels, tool steels, cast iron, copper

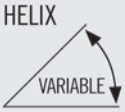
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N60679 | STR430-0.125-D1-R010.0-Z4 | 1/8 | 1/8 | 1/8 | 1-1/2 | 4 | AlTiN | 0.010 |
| N68236 | STR430-0.125-D1-R010.0-Z4 | 1/8 | 1/8 | 1/8 | 1-1/2 | 4 | AlCrN | 0.010 |
| N60680 | STR430-0.125-D3-R010.0-Z4 | 1/8 | 1/8 | 3/8 | 1-1/2 | 4 | AlTiN | 0.010 |
| N68237 | STR430-0.125-D3-R010.0-Z4 | 1/8 | 1/8 | 3/8 | 1-1/2 | 4 | AlCrN | 0.010 |
| N60681 | STR430-0.156-F1-R010.0-Z4 | 5/32 | 3/16 | 3/16 | 2 | 4 | AlTiN | 0.010 |
| N68238 | STR430-0.156-F1-R010.0-Z4 | 5/32 | 3/16 | 3/16 | 2 | 4 | AlCrN | 0.010 |
| N60682 | STR430-0.156-F3-R010.0-Z4 | 5/32 | 3/16 | 7/16 | 2 | 4 | AlTiN | 0.010 |
| N68239 | STR430-0.156-F3-R010.0-Z4 | 5/32 | 3/16 | 7/16 | 2 | 4 | AlCrN | 0.010 |
| N60683 | STR430-0.188-D1-R010.0-Z4 | 3/16 | 3/16 | 3/16 | 2 | 4 | AlTiN | 0.010 |
| N68240 | STR430-0.188-D1-R010.0-Z4 | 3/16 | 3/16 | 3/16 | 2 | 4 | AlCrN | 0.010 |
| N60684 | STR430-0.188-D2-R010.0-Z4 | 3/16 | 3/16 | 7/16 | 2 | 4 | AlTiN | 0.010 |
| N68241 | STR430-0.188-D2-R010.0-Z4 | 3/16 | 3/16 | 7/16 | 2 | 4 | AlCrN | 0.010 |
| N60685 | STR430-0.219-F1-R020.0-Z4 | 7/32 | 1/4 | 1/4 | 2 | 4 | AlTiN | 0.020 |
| N68242 | STR430-0.219-F1-R020.0-Z4 | 7/32 | 1/4 | 1/4 | 2 | 4 | AlCrN | 0.020 |
| N60686 | STR430-0.219-F2-R020.0-Z4 | 7/32 | 1/4 | 7/16 | 2-1/2 | 4 | AlTiN | 0.020 |
| N68243 | STR430-0.219-F2-R020.0-Z4 | 7/32 | 1/4 | 7/16 | 2-1/2 | 4 | AlCrN | 0.020 |
| N60687 | STR430-0.250-D1-R020.0-Z4 | 1/4 | 1/4 | 1/4 | 2 | 4 | AlTiN | 0.020 |
| N68244 | STR430-0.250-D1-R020.0-Z4 | 1/4 | 1/4 | 1/4 | 2 | 4 | AlCrN | 0.020 |
| N60688 | STR430-0.250-D2-R020.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlTiN | 0.020 |
| N68245 | STR430-0.250-D2-R020.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlCrN | 0.020 |
| N60689 | STR430-0.281-F2-R020.0-Z4 | 9/32 | 5/16 | 5/8 | 2-1/2 | 4 | AlTiN | 0.020 |
| N68246 | STR430-0.281-F2-R020.0-Z4 | 9/32 | 5/16 | 5/8 | 2-1/2 | 4 | AlCrN | 0.020 |
| N60690 | STR430-0.313-D1-R020.0-Z4 | 5/16 | 5/16 | 5/16 | 2 | 4 | AlTiN | 0.020 |
| N68247 | STR430-0.313-D1-R020.0-Z4 | 5/16 | 5/16 | 5/16 | 2 | 4 | AlCrN | 0.020 |
| N60691 | STR430-0.313-D3-R020.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | AlTiN | 0.020 |
| N68248 | STR430-0.313-D3-R020.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | AlCrN | 0.020 |
| N60693 | STR430-0.375-D1-R020.3-Z4 | 3/8 | 3/8 | 3/8 | 2 | 4 | AlTiN | 0.020 |
| N68250 | STR430-0.375-D1-R020.3-Z4 | 3/8 | 3/8 | 3/8 | 2 | 4 | AlCrN | 0.020 |
| N60694 | STR430-0.375-D2-R020.3-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlTiN | 0.020 |
| N68251 | STR430-0.375-D2-R020.3-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlCrN | 0.020 |
| N60697 | STR430-0.438-D2-R020.3-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | AlTiN | 0.020 |
| N68254 | STR430-0.438-D2-R020.3-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | AlCrN | 0.020 |
| N60698 | STR430-0.469-F2-R030.3-Z4 | 15/32 | 1/2 | 1 | 3 | 4 | AlTiN | 0.030 |
| N68255 | STR430-0.469-F2-R030.3-Z4 | 15/32 | 1/2 | 1 | 3 | 4 | AlCrN | 0.030 |
| N60699 | STR430-0.500-D1-R030.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | AlTiN | 0.030 |

**DISCOUNT CODE D43**

# STABILIZER™ GP- STR430

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- Weldon flat standard on shank sizes 3/8" and larger
- US Patent # 6,991,409
- Ideal for carbon steels, alloy steels, tool steels, cast iron, copper

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N68256 | STR430-0.500-D1-R030.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | AlCrN | 0.030 |
| N60700 | STR430-0.500-D2-R030.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | AlTiN | 0.030 |
| N68257 | STR430-0.500-D2-R030.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | AlCrN | 0.030 |
| N57337 | STR430-0.500-D3-R030.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlTiN | 0.030 |
| N68258 | STR430-0.500-D3-R030.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlCrN | 0.030 |
| N60702 | STR430-0.625-D1-R030.3-Z4 | 5/8 | 5/8 | 5/8 | 3 | 4 | AlTiN | 0.030 |
| N68260 | STR430-0.625-D1-R030.3-Z4 | 5/8 | 5/8 | 5/8 | 3 | 4 | AlCrN | 0.030 |
| N60703 | STR430-0.625-D2-R030.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlTiN | 0.030 |
| N68261 | STR430-0.625-D2-R030.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlCrN | 0.030 |
| N60704 | STR430-0.750-D1-R030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | AlTiN | 0.030 |
| N68263 | STR430-0.750-D1-R030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | AlCrN | 0.030 |
| N60705 | STR430-0.750-D2-R030.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlTiN | 0.030 |
| N68264 | STR430-0.750-D2-R030.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlCrN | 0.030 |
| N57339 | STR430-0.813-F2-R030.3-Z4 | 13/16 | 7/8 | 1-5/8 | 4 | 4 | AlTiN | 0.030 |
| N68265 | STR430-0.813-F2-R030.3-Z4 | 13/16 | 7/8 | 1-5/8 | 4 | 4 | AlCrN | 0.030 |
| N57340 | STR430-0.875-D2-R030.3-Z4 | 7/8 | 7/8 | 1-3/4 | 4 | 4 | AlTiN | 0.030 |
| N68266 | STR430-0.875-D2-R030.3-Z4 | 7/8 | 7/8 | 1-3/4 | 4 | 4 | AlCrN | 0.030 |
| N57341 | STR430-0.938-F2-R030.3-Z4 | 15/16 | 1 | 1-7/8 | 4 | 4 | AlTiN | 0.030 |
| N68267 | STR430-0.938-F2-R030.3-Z4 | 15/16 | 1 | 1-7/8 | 4 | 4 | AlCrN | 0.030 |
| N60706 | STR430-1.000-D1-R030.3-Z4 | 1 | 1 | 1 | 4 | 4 | AlTiN | 0.030 |
| N68268 | STR430-1.000-D1-R030.3-Z4 | 1 | 1 | 1 | 4 | 4 | AlCrN | 0.030 |
| N60707 | STR430-1.000-D2-R030.3-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | AlTiN | 0.030 |
| N68269 | STR430-1.000-D2-R030.3-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | AlCrN | 0.030 |
| N57342 | STR430-1.000-D3-R030.3-Z4 | 1 | 1 | 2 | 5 | 4 | AlTiN | 0.030 |
| N68270 | STR430-1.000-D3-R030.3-Z4 | 1 | 1 | 2 | 5 | 4 | AlCrN | 0.030 |

# STABILIZER™ GP- STB430

SOLID CARBIDE

HELIX VARIABLE

BALL END

CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- Weldon flat standard on shank sizes 3/8" and larger
- US Patent # 6,991,409
- Ideal for carbon steels, alloy steels, tool steels, cast iron, copper

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N60708 | STB430-0.125-D1-B.0-Z4 | 1/8 | 1/8 | 1/8 | 1-1/2 | 4 | AlTiN |
| N68272 | STB430-0.125-D1-B.0-Z4 | 1/8 | 1/8 | 1/8 | 1-1/2 | 4 | AlCrN |
| N60709 | STB430-0.125-D3-B.0-Z4 | 1/8 | 1/8 | 3/8 | 1-1/2 | 4 | AlTiN |
| N68273 | STB430-0.125-D3-B.0-Z4 | 1/8 | 1/8 | 3/8 | 1-1/2 | 4 | AlCrN |
| N60712 | STB430-0.188-D1-B.0-Z4 | 3/16 | 3/16 | 3/16 | 2 | 4 | AlTiN |
| N68276 | STB430-0.188-D1-B.0-Z4 | 3/16 | 3/16 | 3/16 | 2 | 4 | AlCrN |
| N60713 | STB430-0.188-D2-B.0-Z4 | 3/16 | 3/16 | 7/16 | 2 | 4 | AlTiN |
| N68277 | STB430-0.188-D2-B.0-Z4 | 3/16 | 3/16 | 7/16 | 2 | 4 | AlCrN |
| N60714 | STB430-0.219-F1-B.0-Z4 | 7/32 | 1/4 | 1/4 | 2 | 4 | AlTiN |
| N68278 | STB430-0.219-F1-B.0-Z4 | 7/32 | 1/4 | 1/4 | 2 | 4 | AlCrN |
| N60715 | STB430-0.219-F2-B.0-Z4 | 7/32 | 1/4 | 7/16 | 2-1/2 | 4 | AlTiN |
| N68279 | STB430-0.219-F2-B.0-Z4 | 7/32 | 1/4 | 7/16 | 2-1/2 | 4 | AlCrN |
| N60716 | STB430-0.250-D1-B.0-Z4 | 1/4 | 1/4 | 1/4 | 2 | 4 | AlTiN |
| N68280 | STB430-0.250-D1-B.0-Z4 | 1/4 | 1/4 | 1/4 | 2 | 4 | AlCrN |
| N60717 | STB430-0.250-D2-B.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlTiN |
| N68281 | STB430-0.250-D2-B.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlCrN |
| N60719 | STB430-0.313-D1-B.0-Z4 | 5/16 | 5/16 | 5/16 | 2 | 4 | AlTiN |
| N68283 | STB430-0.313-D1-B.0-Z4 | 5/16 | 5/16 | 5/16 | 2 | 4 | AlCrN |
| N60720 | STB430-0.313-D3-B.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | AlTiN |
| N68284 | STB430-0.313-D3-B.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | AlCrN |
| N60722 | STB430-0.375-D1-B.3-Z4 | 3/8 | 3/8 | 3/8 | 2 | 4 | AlTiN |
| N68286 | STB430-0.375-D1-B.3-Z4 | 3/8 | 3/8 | 3/8 | 2 | 4 | AlCrN |
| N60723 | STB430-0.375-D2-B.3-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlTiN |
| N68287 | STB430-0.375-D2-B.3-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlCrN |
| N60726 | STB430-0.438-D2-B.3-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | AlTiN |
| N68290 | STB430-0.438-D2-B.3-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | AlCrN |
| N60728 | STB430-0.500-D1-B.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | AlTiN |
| N68292 | STB430-0.500-D1-B.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | AlCrN |
| N60729 | STB430-0.500-D2-B.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | AlTiN |
| N68293 | STB430-0.500-D2-B.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | AlCrN |
| N57344 | STB430-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlTiN |
| N68294 | STB430-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlCrN |
| N60730 | STB430-0.563-D2-B.3-Z4 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 4 | AlTiN |
| N68295 | STB430-0.563-D2-B.3-Z4 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 4 | AlCrN |
| N60733 | STB430-0.750-D1-B.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | AlTiN |
| N68299 | STB430-0.750-D1-B.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | AlCrN |
| N60734 | STB430-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlTiN |
| N68300 | STB430-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlCrN |
| N57349 | STB430-1.000-D3-B.3-Z4 | 1 | 1 | 2 | 5 | 4 | AlTiN |
| N68306 | STB430-1.000-D3-B.3-Z4 | 1 | 1 | 2 | 5 | 4 | AlCrN |

**DISCOUNT CODE D43**

# STABILIZER™ GP- STRN430

SOLID CARBIDE

HELIX

RADIUS

CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- Weldon flat standard on shank sizes 3/8" and larger
- US Patent # 6,991,409
- Ideal for carbon steels, alloy steels, tool steels, cast iron, copper

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|---|
| N60737 | STRN430-0.250-E2-R020.0-Z4 | 1/4 | 1/4 | 3/8 | 4 | 4 | AlTiN | 0.020 | 2-1/8 | 0.240 |
| N60738 | STRN430-0.313-E1-R020.0-Z4 | 5/16 | 5/16 | 7/16 | 4 | 4 | AlTiN | 0.020 | 2-1/8 | 0.300 |
| N60739 | STRN430-0.375-E1-R020.3-Z4 | 3/8 | 3/8 | 1/2 | 4 | 4 | AlTiN | 0.020 | 2-1/8 | 0.360 |
| N60740 | STRN430-0.375-E2-R020.3-Z4 | 3/8 | 3/8 | 1/2 | 6 | 4 | AlTiN | 0.020 | 4-1/8 | 0.360 |
| N60741 | STRN430-0.438-E1-R020.3-Z4 | 7/16 | 7/16 | 9/16 | 4 | 4 | AlTiN | 0.020 | 2-1/8 | 0.420 |
| N60743 | STRN430-0.500-E1-R030.3-Z4 | 1/2 | 1/2 | 5/8 | 4 | 4 | AlTiN | 0.030 | 2-1/8 | 0.480 |
| N60744 | STRN430-0.500-E2-R030.3-Z4 | 1/2 | 1/2 | 5/8 | 5 | 4 | AlTiN | 0.030 | 3-1/8 | 0.480 |
| N60745 | STRN430-0.500-E5-R030.3-Z4 | 1/2 | 1/2 | 5/8 | 6 | 4 | AlTiN | 0.030 | 4-1/8 | 0.480 |
| N60746 | STRN430-0.625-E1-R030.3-Z4 | 5/8 | 5/8 | 3/4 | 4 | 4 | AlTiN | 0.030 | 2-1/8 | 0.600 |
| N60747 | STRN430-0.625-E3-R030.3-Z4 | 5/8 | 5/8 | 3/4 | 5 | 4 | AlTiN | 0.030 | 3-1/8 | 0.600 |
| N60748 | STRN430-0.625-E5-R030.3-Z4 | 5/8 | 5/8 | 3/4 | 6 | 4 | AlTiN | 0.030 | 4 | 0.600 |
| N60749 | STRN430-0.750-E1-R030.3-Z4 | 3/4 | 3/4 | 1 | 4 | 4 | AlTiN | 0.030 | 2 | 0.720 |
| N60750 | STRN430-0.750-E3-R030.3-Z4 | 3/4 | 3/4 | 1 | 5 | 4 | AlTiN | 0.030 | 3 | 0.720 |
| N60751 | STRN430-0.750-E5-R030.3-Z4 | 3/4 | 3/4 | 1 | 6 | 4 | AlTiN | 0.030 | 4 | 0.720 |
| N60752 | STRN430-1.000-E1-R030.3-Z4 | 1 | 1 | 1-1/4 | 5 | 4 | AlTiN | 0.030 | 3 | 0.960 |

# STABILIZER™ GP- STBN430

SOLID CARBIDE

HELIX

BALL END

CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- Weldon flat standard on shank sizes 3/8" and larger
- US Patent # 6,991,409
- Ideal for carbon steels, alloy steels, tool steels, cast iron, copper

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|
| N60754 | STBN430-0.250-E2-B.0-Z4 | 1/4 | 1/4 | 3/8 | 4 | 4 | AlTiN | 2-1/8 | 0.240 |
| N60755 | STBN430-0.313-E1-B.0-Z4 | 5/16 | 5/16 | 7/16 | 4 | 4 | AlTiN | 2-1/8 | 0.300 |
| N60756 | STBN430-0.375-E1-B.3-Z4 | 3/8 | 3/8 | 1/2 | 4 | 4 | AlTiN | 2-1/8 | 0.360 |
| N60757 | STBN430-0.375-E2-B.3-Z4 | 3/8 | 3/8 | 1/2 | 6 | 4 | AlTiN | 4-1/8 | 0.360 |
| N60758 | STBN430-0.438-E1-B.3-Z4 | 7/16 | 7/16 | 9/16 | 4 | 4 | AlTiN | 2-1/8 | 0.420 |
| N60759 | STBN430-0.438-E2-B.3-Z4 | 7/16 | 7/16 | 9/16 | 6 | 4 | AlTiN | 4-1/8 | 0.420 |
| N60760 | STBN430-0.500-E1-B.3-Z4 | 1/2 | 1/2 | 5/8 | 4 | 4 | AlTiN | 2-1/8 | 0.480 |
| N60761 | STBN430-0.500-E2-B.3-Z4 | 1/2 | 1/2 | 5/8 | 5 | 4 | AlTiN | 3-1/8 | 0.480 |
| N60762 | STBN430-0.500-E3-B.3-Z4 | 1/2 | 1/2 | 5/8 | 6 | 4 | AlTiN | 4-1/8 | 0.480 |
| N60767 | STBN430-0.750-E2-B.3-Z4 | 3/4 | 3/4 | 1 | 5 | 4 | AlTiN | 3 | 0.720 |
| N60768 | STBN430-0.750-E3-B.3-Z4 | 3/4 | 3/4 | 1 | 6 | 4 | AlTiN | 4 | 0.720 |
| N60769 | STBN430-1.000-E1-B.3-Z4 | 1 | 1 | 1-1/4 | 5 | 4 | AlTiN | 3 | 0.960 |
| N60770 | STBN430-1.000-E2-B.3-Z4 | 1 | 1 | 1-1/4 | 6 | 4 | AlTiN | 4 | 0.960 |

# STABILIZER™ GP- STS430M

SOLID CARBIDE

HELIX

SQUARE END

CENTER CUTTING

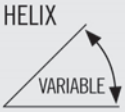
- Eccentric OD relief
- Asymmetrical flute geometry
- US Patent # 6,991,409
- Ideal for carbon steels, alloy steels, tool steels, cast iron, copper

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N57351 | STS430M-030-F1-S.0-Z4 | 3mm | 6mm | 3mm | 58mm | 4 | AlTiN |
| N57352 | STS430M-030-F2-S.0-Z4 | 3mm | 6mm | 6mm | 58mm | 4 | AlTiN |
| N57354 | STS430M-040-F2-S.0-Z4 | 4mm | 6mm | 8mm | 58mm | 4 | AlTiN |
| N57355 | STS430M-050-F1-S.0-Z4 | 5mm | 6mm | 5mm | 58mm | 4 | AlTiN |
| N57356 | STS430M-050-F2-S.0-Z4 | 5mm | 6mm | 10mm | 58mm | 4 | AlTiN |
| N57357 | STS430M-060-D1-S.0-Z4 | 6mm | 6mm | 6mm | 58mm | 4 | AlTiN |
| N57358 | STS430M-060-D2-S.0-Z4 | 6mm | 6mm | 12mm | 58mm | 4 | AlTiN |
| N57362 | STS430M-080-D2-S.0-Z4 | 8mm | 8mm | 16mm | 64mm | 4 | AlTiN |
| N57365 | STS430M-100-D1-S.0-Z4 | 10mm | 10mm | 10mm | 63mm | 4 | AlTiN |
| N57366 | STS430M-100-D2-S.0-Z4 | 10mm | 10mm | 20mm | 73mm | 4 | AlTiN |
| N57369 | STS430M-120-D1-S.0-Z4 | 12mm | 12mm | 12mm | 74mm | 4 | AlTiN |
| N57370 | STS430M-120-D2-S.0-Z4 | 12mm | 12mm | 24mm | 84mm | 4 | AlTiN |
| N57371 | STS430M-130-F1-S.0-Z4 | 13mm | 14mm | 13mm | 76mm | 4 | AlTiN |
| N57372 | STS430M-130-F2-S.0-Z4 | 13mm | 14mm | 26mm | 84mm | 4 | AlTiN |
| N57374 | STS430M-140-F2-S.0-Z4 | 14mm | 14mm | 28mm | 84mm | 4 | AlTiN |
| N57375 | STS430M-150-F1-S.0-Z4 | 15mm | 16mm | 15mm | 83mm | 4 | AlTiN |
| N57376 | STS430M-150-F2-S.0-Z4 | 15mm | 16mm | 30mm | 93mm | 4 | AlTiN |
| N57378 | STS430M-160-D2-S.0-Z4 | 16mm | 16mm | 32mm | 93mm | 4 | AlTiN |
| N57381 | STS430M-200-D1-S.0-Z4 | 20mm | 20mm | 20mm | 93mm | 4 | AlTiN |
| N57382 | STS430M-200-D2-S.0-Z4 | 20mm | 20mm | 40mm | 105mm | 4 | AlTiN |
| N57384 | STS430M-250-D2-S.0-Z4 | 25mm | 25mm | 50mm | 115mm | 4 | AlTiN |

# STABILIZER™ GP- STR430M

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

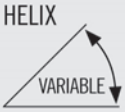
- Eccentric OD relief
- Asymmetrical flute geometry
- US Patent # 6,991,409
- Ideal for carbon steels, alloy steels, tool steels, cast iron, copper

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N57387 | STR430M-040-F1-R025.0-Z4 | 4mm | 6mm | 4mm | 58mm | 4 | AlTiN | 0.25mm |
| N57388 | STR430M-040-F2-R025.0-Z4 | 4mm | 6mm | 8mm | 58mm | 4 | AlTiN | 0.25mm |
| N57390 | STR430M-050-F2-R025.0-Z4 | 5mm | 6mm | 10mm | 58mm | 4 | AlTiN | 0.25mm |
| N57391 | STR430M-060-D1-R050.0-Z4 | 6mm | 6mm | 6mm | 58mm | 4 | AlTiN | 0.50mm |
| N57392 | STR430M-060-D2-R050.0-Z4 | 6mm | 6mm | 12mm | 58mm | 4 | AlTiN | 0.50mm |
| N57393 | STR430M-070-F1-R050.0-Z4 | 7mm | 8mm | 7mm | 64mm | 4 | AlTiN | 0.50mm |
| N57395 | STR430M-080-D1-R050.0-Z4 | 8mm | 8mm | 8mm | 64mm | 4 | AlTiN | 0.50mm |
| N57396 | STR430M-080-D2-R050.0-Z4 | 8mm | 8mm | 16mm | 64mm | 4 | AlTiN | 0.50mm |
| N57398 | STR430M-090-F2-R050.0-Z4 | 9mm | 10mm | 18mm | 73mm | 4 | AlTiN | 0.50mm |
| N57399 | STR430M-100-D1-R050.0-Z4 | 10mm | 10mm | 10mm | 63mm | 4 | AlTiN | 0.50mm |
| N57400 | STR430M-100-D2-R050.0-Z4 | 10mm | 10mm | 20mm | 73mm | 4 | AlTiN | 0.50mm |
| N57403 | STR430M-120-D1-R075.0-Z4 | 12mm | 12mm | 12mm | 74mm | 4 | AlTiN | 0.75mm |
| N57404 | STR430M-120-D2-R075.0-Z4 | 12mm | 12mm | 24mm | 84mm | 4 | AlTiN | 0.75mm |
| N57406 | STR430M-130-F2-R075.0-Z4 | 13mm | 14mm | 26mm | 84mm | 4 | AlTiN | 0.75mm |
| N57408 | STR430M-140-F2-R075.0-Z4 | 14mm | 14mm | 28mm | 84mm | 4 | AlTiN | 0.75mm |
| N57412 | STR430M-160-D2-R075.0-Z4 | 16mm | 16mm | 32mm | 93mm | 4 | AlTiN | 0.75mm |
| N57415 | STR430M-200-D1-R075.0-Z4 | 20mm | 20mm | 20mm | 93mm | 4 | AlTiN | 0.75mm |
| N57416 | STR430M-200-D2-R075.0-Z4 | 20mm | 20mm | 40mm | 105mm | 4 | AlTiN | 0.75mm |
| N57418 | STR430M-250-D2-R075.0-Z4 | 25mm | 25mm | 50mm | 115mm | 4 | AlTiN | 0.75mm |

# STABILIZER™ GP- STB430M

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- Eccentric OD relief
- Asymmetrical flute geometry
- US Patent # 6,991,409
- Ideal for carbon steels, alloy steels, tool steels, cast iron, copper

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N57422 | STB430M-040-F2-B.0-Z4 | 4mm | 6mm | 8mm | 58mm | 4 | AlTiN |
| N57426 | STB430M-060-D2-B.0-Z4 | 6mm | 6mm | 12mm | 58mm | 4 | AlTiN |
| N57427 | STB430M-070-F1-B.0-Z4 | 7mm | 8mm | 7mm | 64mm | 4 | AlTiN |
| N57428 | STB430M-070-F2-B.0-Z4 | 7mm | 8mm | 14mm | 64mm | 4 | AlTiN |
| N57430 | STB430M-080-D2-B.0-Z4 | 8mm | 8mm | 16mm | 64mm | 4 | AlTiN |
| N57434 | STB430M-100-D2-B.0-Z4 | 10mm | 10mm | 20mm | 73mm | 4 | AlTiN |
| N57438 | STB430M-120-D2-B.0-Z4 | 12mm | 12mm | 24mm | 84mm | 4 | AlTiN |
| N57440 | STB430M-130-F2-B.0-Z4 | 13mm | 14mm | 26mm | 84mm | 4 | AlTiN |
| N57444 | STB430M-150-F2-B.0-Z4 | 15mm | 16mm | 30mm | 93mm | 4 | AlTiN |
| N57445 | STB430M-160-D1-B.0-Z4 | 16mm | 16mm | 16mm | 83mm | 4 | AlTiN |

# STABILIZER™ HT- STR440

SOLID CARBIDE

HELIX VARIABLE

RADIUS

CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- US Patent # 6,991,409
- Ideal for stainless steel, high temperature alloys, nickel based alloys, titanium and titanium alloys

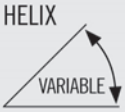
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS | SHANK CONDITION |
|---|---|---|---|---|---|---|---|---|---|
| N57453 | STR440-0.125-D1-R010.0-Z4 | 1/8 | 1/8 | 1/8 | 1-1/2 | 4 | AlTiN | 0.010 | Cylindrical Shank |
| N68444 | STR440-0.125-D1-R010.0-Z4 | 1/8 | 1/8 | 1/8 | 1-1/2 | 4 | AlCrN | 0.010 | Cylindrical Shank |
| N57454 | STR440-0.125-D3-R010.0-Z4 | 1/8 | 1/8 | 3/8 | 1-1/2 | 4 | AlTiN | 0.010 | Cylindrical Shank |
| N68445 | STR440-0.125-D3-R010.0-Z4 | 1/8 | 1/8 | 3/8 | 1-1/2 | 4 | AlCrN | 0.010 | Cylindrical Shank |
| N57455 | STR440-0.156-F1-R010.0-Z4 | 5/32 | 3/16 | 3/16 | 2 | 4 | AlTiN | 0.010 | Cylindrical Shank |
| N68446 | STR440-0.156-F1-R010.0-Z4 | 5/32 | 3/16 | 3/16 | 2 | 4 | AlCrN | 0.010 | Cylindrical Shank |
| N57456 | STR440-0.156-F3-R010.0-Z4 | 5/32 | 3/16 | 7/16 | 2 | 4 | AlTiN | 0.010 | Cylindrical Shank |
| N68447 | STR440-0.156-F3-R010.0-Z4 | 5/32 | 3/16 | 7/16 | 2 | 4 | AlCrN | 0.010 | Cylindrical Shank |
| N57457 | STR440-0.188-D1-R010.0-Z4 | 3/16 | 3/16 | 3/16 | 2 | 4 | AlTiN | 0.010 | Cylindrical Shank |
| N68448 | STR440-0.188-D1-R010.0-Z4 | 3/16 | 3/16 | 3/16 | 2 | 4 | AlCrN | 0.010 | Cylindrical Shank |
| N57458 | STR440-0.188-D2-R010.0-Z4 | 3/16 | 3/16 | 7/16 | 2 | 4 | AlTiN | 0.010 | Cylindrical Shank |
| N68449 | STR440-0.188-D2-R010.0-Z4 | 3/16 | 3/16 | 7/16 | 2 | 4 | AlCrN | 0.010 | Cylindrical Shank |
| N57011 | STR440-0.188-D2-R030.0-Z4 | 3/16 | 3/16 | 7/16 | 2 | 4 | AlTiN | 0.030 | Cylindrical Shank |
| N57459 | STR440-0.219-F1-R020.0-Z4 | 7/32 | 1/4 | 1/4 | 2 | 4 | AlTiN | 0.020 | Cylindrical Shank |
| N68450 | STR440-0.219-F1-R020.0-Z4 | 7/32 | 1/4 | 1/4 | 2 | 4 | AlCrN | 0.020 | Cylindrical Shank |
| N57461 | STR440-0.250-D1-R020.0-Z4 | 1/4 | 1/4 | 1/4 | 2 | 4 | AlTiN | 0.020 | Cylindrical Shank |
| N68452 | STR440-0.250-D1-R020.0-Z4 | 1/4 | 1/4 | 1/4 | 2 | 4 | AlCrN | 0.020 | Cylindrical Shank |
| N57012 | STR440-0.250-D2-R015.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlTiN | 0.015 | Cylindrical Shank |
| N57462 | STR440-0.250-D2-R020.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlTiN | 0.020 | Cylindrical Shank |
| N68453 | STR440-0.250-D2-R020.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlCrN | 0.020 | Cylindrical Shank |
| N57013 | STR440-0.250-D2-R030.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlTiN | 0.030 | Cylindrical Shank |
| N57014 | STR440-0.250-D2-R060.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlTiN | 0.060 | Cylindrical Shank |
| N57463 | STR440-0.281-F2-R020.0-Z4 | 9/32 | 5/16 | 5/8 | 2-1/2 | 4 | AlTiN | 0.020 | Cylindrical Shank |
| N68454 | STR440-0.281-F2-R020.0-Z4 | 9/32 | 5/16 | 5/8 | 2-1/2 | 4 | AlCrN | 0.020 | Cylindrical Shank |
| N57464 | STR440-0.313-D1-R020.0-Z4 | 5/16 | 5/16 | 5/16 | 2 | 4 | AlTiN | 0.020 | Cylindrical Shank |
| N68455 | STR440-0.313-D1-R020.0-Z4 | 5/16 | 5/16 | 5/16 | 2 | 4 | AlCrN | 0.020 | Cylindrical Shank |
| N57465 | STR440-0.313-D3-R020.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | AlTiN | 0.020 | Cylindrical Shank |
| N68456 | STR440-0.313-D3-R020.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | AlCrN | 0.020 | Cylindrical Shank |
| N57467 | STR440-0.375-D1-R020.3-Z4 | 3/8 | 3/8 | 3/8 | 2 | 4 | AlTiN | 0.020 | Weldon Flat |
| N68458 | STR440-0.375-D1-R020.3-Z4 | 3/8 | 3/8 | 3/8 | 2 | 4 | AlCrN | 0.020 | Weldon Flat |
| N57468 | STR440-0.375-D2-R020.3-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlTiN | 0.020 | Weldon Flat |
| N68459 | STR440-0.375-D2-R020.3-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlCrN | 0.020 | Weldon Flat |
| N57015 | STR440-0.375-D3-R020.0-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlTiN | 0.020 | Cylindrical Shank |
| N57016 | STR440-0.375-D2-R030.0-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlTiN | 0.030 | Cylindrical Shank |
| N57017 | STR440-0.375-D2-R060.0-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlTiN | 0.060 | Cylindrical Shank |
| N57018 | STR440-0.375-D2-R090.0-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlTiN | 0.090 | Cylindrical Shank |
| N57471 | STR440-0.438-D2-R020.3-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | AlTiN | 0.020 | Weldon Flat |
| N68462 | STR440-0.438-D2-R020.3-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | AlCrN | 0.020 | Weldon Flat |
| N57473 | STR440-0.500-D1-R030.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | AlTiN | 0.030 | Weldon Flat |
| N68464 | STR440-0.500-D1-R030.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | AlCrN | 0.030 | Weldon Flat |

**DISCOUNT CODE D43**

# STABILIZER™ HT- STR440

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- US Patent # 6,991,409
- Ideal for stainless steel, high temperature alloys, nickel based alloys, titanium and titanium alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS | SHANK CONDITION |
|---|---|---|---|---|---|---|---|---|---|
| N57474 | STR440-0.500-D2-R030.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | AlTiN | 0.030 | Weldon Flat |
| N68465 | STR440-0.500-D2-R030.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | AlCrN | 0.030 | Weldon Flat |
| N57019 | STR440-0.500-D3-R015.0-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlTiN | 0.015 | Cylindrical Shank |
| N57475 | STR440-0.500-D3-R030.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlTiN | 0.030 | Weldon Flat |
| N68466 | STR440-0.500-D3-R030.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlCrN | 0.030 | Weldon Flat |
| N57020 | STR440-0.500-D4-R030.0-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlTiN | 0.030 | Cylindrical Shank |
| N57021 | STR440-0.500-D3-R060.0-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlTiN | 0.060 | Cylindrical Shank |
| N57022 | STR440-0.500-D3-R090.0-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlTiN | 0.090 | Cylindrical Shank |
| N57023 | STR440-0.500-D3-R120.0-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlTiN | 0.120 | Cylindrical Shank |
| N57477 | STR440-0.625-D1-R030.3-Z4 | 5/8 | 5/8 | 5/8 | 3 | 4 | AlTiN | 0.030 | Weldon Flat |
| N68468 | STR440-0.625-D1-R030.3-Z4 | 5/8 | 5/8 | 5/8 | 3 | 4 | AlCrN | 0.030 | Weldon Flat |
| N57478 | STR440-0.625-D2-R030.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlTiN | 0.030 | Weldon Flat |
| N68469 | STR440-0.625-D2-R030.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlCrN | 0.030 | Weldon Flat |
| N57024 | STR440-0.625-D3-R030.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlTiN | 0.030 | Cylindrical Shank |
| N57025 | STR440-0.625-D2-R060.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlTiN | 0.060 | Cylindrical Shank |
| N57026 | STR440-0.625-D2-R090.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlTiN | 0.090 | Cylindrical Shank |
| N57027 | STR440-0.625-D2-R120.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlTiN | 0.120 | Cylindrical Shank |
| N57028 | STR440-0.625-D2-R190.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlTiN | 0.190 | Cylindrical Shank |
| N57480 | STR440-0.750-D1-R030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | AlTiN | 0.030 | Weldon Flat |
| N68471 | STR440-0.750-D1-R030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | AlCrN | 0.030 | Weldon Flat |
| N57481 | STR440-0.750-D2-R030.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlTiN | 0.030 | Weldon Flat |
| N68472 | STR440-0.750-D2-R030.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlCrN | 0.030 | Weldon Flat |
| N57029 | STR440-0.750-D3-R030.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlTiN | 0.030 | Cylindrical Shank |
| N57030 | STR440-0.750-D2-R060.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlTiN | 0.060 | Cylindrical Shank |
| N57031 | STR440-0.750-D2-R090.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlTiN | 0.090 | Cylindrical Shank |
| N57032 | STR440-0.750-D2-R120.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlTiN | 0.120 | Cylindrical Shank |
| N57033 | STR440-0.750-D2-R190.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlTiN | 0.190 | Cylindrical Shank |
| N57485 | STR440-1.000-D1-R030.3-Z4 | 1 | 1 | 1 | 4 | 4 | AlTiN | 0.030 | Weldon Flat |
| N68476 | STR440-1.000-D1-R030.3-Z4 | 1 | 1 | 1 | 4 | 4 | AlCrN | 0.030 | Weldon Flat |
| N57486 | STR440-1.000-D2-R030.3-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | AlTiN | 0.030 | Weldon Flat |
| N68477 | STR440-1.000-D2-R030.3-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | AlCrN | 0.030 | Weldon Flat |
| N57487 | STR440-1.000-D3-R030.3-Z4 | 1 | 1 | 2 | 5 | 4 | AlTiN | 0.030 | Weldon Flat |
| N68478 | STR440-1.000-D3-R030.3-Z4 | 1 | 1 | 2 | 5 | 4 | AlCrN | 0.030 | Weldon Flat |
| N57034 | STR440-1.000-D4-R030.0-Z4 | 1 | 1 | 2 | 5 | 4 | AlTiN | 0.030 | Cylindrical Shank |
| N57035 | STR440-1.000-D2-R060.0-Z4 | 1 | 1 | 2 | 5 | 4 | AlTiN | 0.060 | Cylindrical Shank |
| N57036 | STR440-1.000-D2-R090.0-Z4 | 1 | 1 | 2 | 5 | 4 | AlTiN | 0.090 | Cylindrical Shank |
| N57037 | STR440-1.000-D2-R120.0-Z4 | 1 | 1 | 2 | 5 | 4 | AlTiN | 0.120 | Cylindrical Shank |
| N57038 | STR440-1.000-D2-R190.0-Z4 | 1 | 1 | 2 | 5 | 4 | AlTiN | 0.190 | Cylindrical Shank |
| N57039 | STR440-1.000-D2-R250.0-Z4 | 1 | 1 | 2 | 5 | 4 | AlTiN | 0.250 | Cylindrical Shank |

**DISCOUNT CODE D43**

# STABILIZER™ HT- STB440

SOLID CARBIDE

HELIX VARIABLE

BALL END

CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- Weldon flat standard on shank sizes 3/8" and larger
- US Patent # 6,991,409
- Ideal for stainless, titanium, high temperature, nickel based and titanium alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N57489 | STB440-0.125-D1-B.0-Z4 | 1/8 | 1/8 | 1/8 | 1-1/2 | 4 | AlTiN |
| N68480 | STB440-0.125-D1-B.0-Z4 | 1/8 | 1/8 | 1/8 | 1-1/2 | 4 | AlCrN |
| N57490 | STB440-0.125-D3-B.0-Z4 | 1/8 | 1/8 | 3/8 | 1-1/2 | 4 | AlTiN |
| N68481 | STB440-0.125-D3-B.0-Z4 | 1/8 | 1/8 | 3/8 | 1-1/2 | 4 | AlCrN |
| N57493 | STB440-0.188-D1-B.0-Z4 | 3/16 | 3/16 | 3/16 | 2 | 4 | AlTiN |
| N68484 | STB440-0.188-D1-B.0-Z4 | 3/16 | 3/16 | 3/16 | 2 | 4 | AlCrN |
| N57494 | STB440-0.188-D2-B.0-Z4 | 3/16 | 3/16 | 7/16 | 2 | 4 | AlTiN |
| N68485 | STB440-0.188-D2-B.0-Z4 | 3/16 | 3/16 | 7/16 | 2 | 4 | AlCrN |
| N57497 | STB440-0.250-D1-B.0-Z4 | 1/4 | 1/4 | 1/4 | 2 | 4 | AlTiN |
| N68488 | STB440-0.250-D1-B.0-Z4 | 1/4 | 1/4 | 1/4 | 2 | 4 | AlCrN |
| N57498 | STB440-0.250-D2-B.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlTiN |
| N68489 | STB440-0.250-D2-B.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | AlCrN |
| N57503 | STB440-0.375-D1-B.3-Z4 | 3/8 | 3/8 | 3/8 | 2 | 4 | AlTiN |
| N68494 | STB440-0.375-D1-B.3-Z4 | 3/8 | 3/8 | 3/8 | 2 | 4 | AlCrN |
| N57504 | STB440-0.375-D2-B.3-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlTiN |
| N68495 | STB440-0.375-D2-B.3-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | AlCrN |
| N57509 | STB440-0.500-D1-B.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | AlTiN |
| N68500 | STB440-0.500-D1-B.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | AlCrN |
| N57510 | STB440-0.500-D2-B.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | AlTiN |
| N68501 | STB440-0.500-D2-B.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | AlCrN |
| N57511 | STB440-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlTiN |
| N68502 | STB440-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlCrN |
| N57514 | STB440-0.625-D2-B.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlTiN |
| N68505 | STB440-0.625-D2-B.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | AlCrN |
| N57516 | STB440-0.750-D1-B.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | AlTiN |
| N68507 | STB440-0.750-D1-B.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | AlCrN |
| N57517 | STB440-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlTiN |
| N68508 | STB440-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | AlCrN |
| N57518 | STB440-0.813-F2-B.3-Z4 | 13/16 | 7/8 | 1-5/8 | 4 | 4 | AlTiN |
| N68509 | STB440-0.813-F2-B.3-Z4 | 13/16 | 7/8 | 1-5/8 | 4 | 4 | AlCrN |
| N57520 | STB440-0.938-F2-B.3-Z4 | 15/16 | 1 | 1-7/8 | 4 | 4 | AlTiN |
| N68511 | STB440-0.938-F2-B.3-Z4 | 15/16 | 1 | 1-7/8 | 4 | 4 | AlCrN |
| N57521 | STB440-1.000-D1-B.3-Z4 | 1 | 1 | 1 | 4 | 4 | AlTiN |
| N68512 | STB440-1.000-D1-B.3-Z4 | 1 | 1 | 1 | 4 | 4 | AlCrN |
| N57523 | STB440-1.000-D3-B.3-Z4 | 1 | 1 | 2 | 5 | 4 | AlTiN |
| N68514 | STB440-1.000-D3-B.3-Z4 | 1 | 1 | 2 | 5 | 4 | AlCrN |
| N57524 | STB440-1.250-D2-B.3-Z4 | 1-1/4 | 1-1/4 | 2-1/4 | 5 | 4 | AlTiN |
| N68515 | STB440-1.250-D2-B.3-Z4 | 1-1/4 | 1-1/4 | 2-1/4 | 5 | 4 | AlCrN |

**DISCOUNT CODE D43**

# STABILIZER™ HT- STRN440

SOLID CARBIDE | HELIX VARIABLE | RADIUS | CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- Weldon flat standard on shank sizes 3/8" and larger
- US Patent # 6,991,409
- Ideal for stainless, titanium, high temperature, nickel based and titanium alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|---|
| N57525 | STRN440-0.250-E2-R020.0-Z4 | 1/4 | 1/4 | 3/8 | 4 | 4 | AlTiN | 0.020 | 2-1/8 | 0.240 |
| N57526 | STRN440-0.313-E1-R020.0-Z4 | 5/16 | 5/16 | 7/16 | 4 | 4 | AlTiN | 0.020 | 2-1/8 | 0.300 |
| N57527 | STRN440-0.375-E1-R020.3-Z4 | 3/8 | 3/8 | 1/2 | 4 | 4 | AlTiN | 0.020 | 2-1/8 | 0.360 |
| N57531 | STRN440-0.500-E1-R030.3-Z4 | 1/2 | 1/2 | 5/8 | 4 | 4 | AlTiN | 0.030 | 2-1/8 | 0.480 |
| N57532 | STRN440-0.500-E2-R030.3-Z4 | 1/2 | 1/2 | 5/8 | 5 | 4 | AlTiN | 0.030 | 3-1/8 | 0.480 |
| N57533 | STRN440-0.500-E3-R030.3-Z4 | 1/2 | 1/2 | 5/8 | 6 | 4 | AlTiN | 0.030 | 4-1/8 | 0.480 |
| N57536 | STRN440-0.625-E3-R030.3-Z4 | 5/8 | 5/8 | 3/4 | 6 | 4 | AlTiN | 0.030 | 4 | 0.600 |
| N57538 | STRN440-0.750-E2-R030.3-Z4 | 3/4 | 3/4 | 1 | 5 | 4 | AlTiN | 0.030 | 3 | 0.720 |
| N57539 | STRN440-0.750-E3-R030.3-Z4 | 3/4 | 3/4 | 1 | 6 | 4 | AlTiN | 0.030 | 4 | 0.720 |
| N57541 | STRN440-1.000-E2-R030.3-Z4 | 1 | 1 | 1-1/4 | 6 | 4 | AlTiN | 0.030 | 4 | 0.960 |

# STABILIZER™ HT- STBN440

SOLID CARBIDE | HELIX VARIABLE | BALL END | CENTER CUTTING

- Eccentric primary relief
- Asymmetrical flute geometry
- Weldon flat standard on shank sizes 3/8" and larger
- US Patent # 6,991,409
- Ideal for stainless, titanium, high temperature, nickel based and titanium alloys

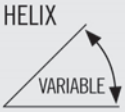
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|
| N57542 | STBN440-0.250-E2-B.0-Z4 | 1/4 | 1/4 | 3/8 | 4 | 4 | AlTiN | 2-1/8 | 0.240 |
| N57544 | STBN440-0.375-E1-B.3-Z4 | 3/8 | 3/8 | 1/2 | 4 | 4 | AlTiN | 2-1/8 | 0.360 |
| N57545 | STBN440-0.375-E2-B.3-Z4 | 3/8 | 3/8 | 1/2 | 6 | 4 | AlTiN | 4-1/8 | 0.360 |
| N57546 | STBN440-0.438-E1-B.3-Z4 | 7/16 | 7/16 | 9/16 | 4 | 4 | AlTiN | 2-1/8 | 0.420 |
| N57548 | STBN440-0.500-E1-B.3-Z4 | 1/2 | 1/2 | 5/8 | 4 | 4 | AlTiN | 2-1/8 | 0.480 |
| N57549 | STBN440-0.500-E2-B.3-Z4 | 1/2 | 1/2 | 5/8 | 5 | 4 | AlTiN | 3-1/8 | 0.480 |
| N57550 | STBN440-0.500-E3-B.3-Z4 | 1/2 | 1/2 | 5/8 | 6 | 4 | AlTiN | 4-1/8 | 0.480 |
| N57551 | STBN440-0.625-E1-B.3-Z4 | 5/8 | 5/8 | 3/4 | 4 | 4 | AlTiN | 2-1/8 | 0.600 |
| N57554 | STBN440-0.750-E1-B.3-Z4 | 3/4 | 3/4 | 1 | 4 | 4 | AlTiN | 2 | 0.720 |
| N57556 | STBN440-0.750-E3-B.3-Z4 | 3/4 | 3/4 | 1 | 6 | 4 | AlTiN | 4 | 0.720 |

**DISCOUNT CODE D43**

# STABILIZER™ HT- STR440M

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

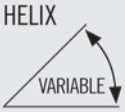
- Eccentric OD relief
- Asymmetrical flute geometry
- US Patent # 6,991,409
- Ideal for stainless, titanium, high temperature, nickel based and titanium alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N68666 | STR440M-030-F2-R025.0-Z4 | 3mm | 6mm | 6mm | 58mm | 4 | AlTiN | 0.25mm |
| N68667 | STR440M-040-F1-R025.0-Z4 | 4mm | 6mm | 4mm | 58mm | 4 | AlTiN | 0.25mm |
| N68668 | STR440M-040-F2-R025.0-Z4 | 4mm | 6mm | 8mm | 58mm | 4 | AlTiN | 0.25mm |
| N68670 | STR440M-050-F2-R025.0-Z4 | 5mm | 6mm | 10mm | 58mm | 4 | AlTiN | 0.25mm |
| N68671 | STR440M-060-D1-R050.0-Z4 | 6mm | 6mm | 6mm | 58mm | 4 | AlTiN | 0.50mm |
| N68672 | STR440M-060-D2-R050.0-Z4 | 6mm | 6mm | 12mm | 58mm | 4 | AlTiN | 0.50mm |
| N68675 | STR440M-080-D1-R050.0-Z4 | 8mm | 8mm | 8mm | 64mm | 4 | AlTiN | 0.50mm |
| N68676 | STR440M-080-D2-R050.0-Z4 | 8mm | 8mm | 16mm | 64mm | 4 | AlTiN | 0.50mm |
| N68679 | STR440M-100-D1-R050.0-Z4 | 10mm | 10mm | 10mm | 63mm | 4 | AlTiN | 0.50mm |
| N68680 | STR440M-100-D2-R050.0-Z4 | 10mm | 10mm | 20mm | 73mm | 4 | AlTiN | 0.50mm |
| N68683 | STR440M-120-D1-R075.0-Z4 | 12mm | 12mm | 12mm | 74mm | 4 | AlTiN | 0.75mm |
| N68684 | STR440M-120-D2-R075.0-Z4 | 12mm | 12mm | 24mm | 84mm | 4 | AlTiN | 0.75mm |
| N68692 | STR440M-160-D2-R075.0-Z4 | 16mm | 16mm | 32mm | 93mm | 4 | AlTiN | 0.75mm |
| N68696 | STR440M-200-D2-R075.0-Z4 | 20mm | 20mm | 40mm | 105mm | 4 | AlTiN | 0.75mm |
| N68698 | STR440M-250-D2-R075.0-Z4 | 25mm | 25mm | 50mm | 115mm | 4 | AlTiN | 0.75mm |

# STABILIZER™ HT- STB440M

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- Eccentric OD relief
- Asymmetrical flute geometry
- US Patent # 6,991,409
- Ideal for stainless, titanium, high temperature, nickel based and titanium alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N57593 | STB440M-030-F1-B.0-Z4 | 3mm | 6mm | 3mm | 58mm | 4 | AlTiN |
| N57594 | STB440M-030-F2-B.0-Z4 | 3mm | 6mm | 6mm | 58mm | 4 | AlTiN |
| N57595 | STB440M-040-F1-B.0-Z4 | 4mm | 6mm | 4mm | 58mm | 4 | AlTiN |
| N57597 | STB440M-050-F1-B.0-Z4 | 5mm | 6mm | 5mm | 58mm | 4 | AlTiN |
| N57599 | STB440M-060-D1-B.0-Z4 | 6mm | 6mm | 6mm | 58mm | 4 | AlTiN |
| N57600 | STB440M-060-D2-B.0-Z4 | 6mm | 6mm | 12mm | 58mm | 4 | AlTiN |
| N57604 | STB440M-080-D2-B.0-Z4 | 8mm | 8mm | 16mm | 64mm | 4 | AlTiN |
| N57608 | STB440M-100-D2-B.0-Z4 | 10mm | 10mm | 20mm | 73mm | 4 | AlTiN |
| N57611 | STB440M-120-D1-B.0-Z4 | 12mm | 12mm | 12mm | 74mm | 4 | AlTiN |
| N57612 | STB440M-120-D2-B.0-Z4 | 12mm | 12mm | 24mm | 84mm | 4 | AlTiN |
| N57613 | STB440M-130-F1-B.0-Z4 | 13mm | 14mm | 13mm | 76mm | 4 | AlTiN |
| N57614 | STB440M-130-F2-B.0-Z4 | 13mm | 14mm | 26mm | 84mm | 4 | AlTiN |
| N57617 | STB440M-150-F1-B.0-Z4 | 15mm | 16mm | 15mm | 83mm | 4 | AlTiN |
| N57620 | STB440M-160-D2-B.0-Z4 | 16mm | 16mm | 32mm | 93mm | 4 | AlTiN |
| N57623 | STB440M-200-D1-B.0-Z4 | 20mm | 20mm | 20mm | 93mm | 4 | AlTiN |

# STABILIZER™- STS540

SOLID CARBIDE

HELIX

SQUARE END

CENTER CUTTING

- Asymmetrical cutting edges
- US Patent # 6,991,409
- Ideal for profiling, high speed and trochoidal milling, stainless, titanium, high temperature alloys, carbon, alloy and tool steels

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N68625 | STS540-0.250-D3-S.0-Z5 | 1/4 | 1/4 | 3/4 | 2-1/2 | 5 | AlCrN |
| N68626 | STS540-0.313-D2-S.0-Z5 | 5/16 | 5/16 | 3/4 | 2-1/2 | 5 | AlCrN |
| N68627 | STS540-0.375-D2-S.0-Z5 | 3/8 | 3/8 | 7/8 | 2-1/2 | 5 | AlCrN |
| N68628 | STS540-0.500-D3-S.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlCrN |
| N68629 | STS540-0.625-D2-S.0-Z5 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 5 | AlCrN |
| N68630 | STS540-0.750-D2-S.0-Z5 | 3/4 | 3/4 | 1-1/2 | 4 | 5 | AlCrN |

# STABILIZER™- STR540

SOLID CARBIDE

HELIX VARIABLE

RADIUS

CENTER CUTTING

- Asymmetrical flute geometry
- US Patent # 6,991,409
- Ideal for profiling, high speed and trochoidal milling, stainless, titanium, high temperature alloys, carbon, alloy and tool steels

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N68632 | STR540-0.250-D3-R015.0-Z5 | 1/4 | 1/4 | 3/4 | 2-1/2 | 5 | AlCrN | 0.015 |
| N68639 | STR540-0.250-D3-R030.0-Z5 | 1/4 | 1/4 | 3/4 | 2-1/2 | 5 | AlCrN | 0.030 |
| N68646 | STR540-0.250-D3-R045.0-Z5 | 1/4 | 1/4 | 3/4 | 2-1/2 | 5 | AlCrN | 0.045 |
| N68633 | STR540-0.313-D2-R015.0-Z5 | 5/16 | 5/16 | 3/4 | 2-1/2 | 5 | AlCrN | 0.015 |
| N68634 | STR540-0.375-D2-R015.0-Z5 | 3/8 | 3/8 | 7/8 | 2-1/2 | 5 | AlCrN | 0.015 |
| N68641 | STR540-0.375-D2-R030.0-Z5 | 3/8 | 3/8 | 7/8 | 2-1/2 | 5 | AlCrN | 0.030 |
| N68648 | STR540-0.375-D2-R045.0-Z5 | 3/8 | 3/8 | 7/8 | 2-1/2 | 5 | AlCrN | 0.045 |
| N68635 | STR540-0.500-D3-R015.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlCrN | 0.015 |
| N68642 | STR540-0.500-D3-R030.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlCrN | 0.030 |
| N68649 | STR540-0.500-D3-R045.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlCrN | 0.045 |
| N68653 | STR540-0.500-D3-R060.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlCrN | 0.060 |
| N68657 | STR540-0.500-D3-R090.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlCrN | 0.090 |
| N68661 | STR540-0.500-D3-R125.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlCrN | 0.125 |
| N68636 | STR540-0.625-D2-R015.0-Z5 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 5 | AlCrN | 0.015 |
| N68643 | STR540-0.625-D2-R030.0-Z5 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 5 | AlCrN | 0.030 |
| N68650 | STR540-0.625-D2-R045.0-Z5 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 5 | AlCrN | 0.045 |
| N68654 | STR540-0.625-D2-R060.0-Z5 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 5 | AlCrN | 0.060 |
| N68658 | STR540-0.625-D2-R090.0-Z5 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 5 | AlCrN | 0.090 |
| N68662 | STR540-0.625-D2-R125.0-Z5 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 5 | AlCrN | 0.125 |
| N68644 | STR540-0.750-D2-R030.0-Z5 | 3/4 | 3/4 | 1-1/2 | 4 | 5 | AlCrN | 0.030 |
| N68655 | STR540-0.750-D2-R060.0-Z5 | 3/4 | 3/4 | 1-1/2 | 4 | 5 | AlCrN | 0.060 |
| N68659 | STR540-0.750-D2-R090.0-Z5 | 3/4 | 3/4 | 1-1/2 | 4 | 5 | AlCrN | 0.090 |
| N68663 | STR540-0.750-D2-R125.0-Z5 | 3/4 | 3/4 | 1-1/2 | 4 | 5 | AlCrN | 0.125 |
| N68638 | STR540-1.000-D2-R015.0-Z5 | 1 | 1 | 1-3/4 | 4 | 5 | AlCrN | 0.015 |
| N68645 | STR540-1.000-D2-R030.0-Z5 | 1 | 1 | 1-3/4 | 4 | 5 | AlCrN | 0.030 |
| N68656 | STR540-1.000-D2-R060.0-Z5 | 1 | 1 | 1-3/4 | 4 | 5 | AlCrN | 0.060 |

## STABILIZER™- STS540M

SOLID CARBIDE

HELIX VARIABLE

SQUARE END

CENTER CUTTING

- Asymmetrical flute geometry
- US Patent # 6,991,409
- Ideal for profiling, high speed and trochoidal milling, stainless, titanium, high temperature alloys, carbon, alloy and tool steels

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N68699 | STS540M-060-D2-S.0-Z5 | 6mm | 6mm | 12mm | 58mm | 5 | AlTiN |
| N68700 | STS540M-080-D2-S.0-Z5 | 8mm | 8mm | 16mm | 64mm | 5 | AlTiN |
| N68701 | STS540M-100-D2-S.0-Z5 | 10mm | 10mm | 20mm | 73mm | 5 | AlTiN |
| N68702 | STS540M-120-D2-S.0-Z5 | 12mm | 12mm | 24mm | 84mm | 5 | AlTiN |

## STABILIZER™- STR540M

SOLID CARBIDE

HELIX VARIABLE

RADIUS

CENTER CUTTING

- Asymmetrical flute geometry
- US Patent # 6,991,409
- Ideal for profiling, high speed and trochoidal milling, stainless, titanium, high temperature alloys, carbon, alloy and tool steels

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N68717 | STR540M-060-D2-R050.0-Z5 | 6mm | 6mm | 12mm | 58mm | 5 | AlTiN | 0.50mm |
| N68718 | STR540M-080-D2-R050.0-Z5 | 8mm | 8mm | 16mm | 64mm | 5 | AlTiN | 0.50mm |
| N68719 | STR540M-100-D2-R050.0-Z5 | 10mm | 10mm | 20mm | 73mm | 5 | AlTiN | 0.50mm |
| N68720 | STR540M-120-D2-R075.0-Z5 | 12mm | 12mm | 24mm | 84mm | 5 | AlTiN | 0.75mm |
| N68722 | STR540M-160-D2-R075.0-Z5 | 16mm | 16mm | 32mm | 93mm | 5 | AlTiN | 0.75mm |

Niagara Cutter

**STS430 / STR430 / STB430**

| SLOTTING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.00 | 1.00 | 400 | n (rev/min) | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | $f_z$ (in) | 0.0005 | 0.0010 | 0.0014 | 0.0019 | 0.0024 | 0.0029 | 0.0038 |
| | | | | 300 - 500 | $v_f$ (in/min) | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 |
| | E 3 - 4 | 1.00 | 1.00 | 325 | n (rev/min) | 9932 | 4966 | 3311 | 2483 | 1986 | 1655 | 1242 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 275 - 375 | $v_f$ (in/min) | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 |
| | E 5 - 6 | 0.50 | 1.00 | 200 | n (rev/min) | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0008 | 0.0011 | 0.0014 | 0.0016 | 0.0022 |
| | | | | 180 - 220 | $v_f$ (in/min) | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| K | E 12 - 13 | 1.00 | 1.00 | 350 | n (rev/min) | 10696 | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 280 - 420 | $v_f$ (in/min) | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| | E 14 - 15 | 0.40 | 1.00 | 325 | n (rev/min) | 9932 | 4966 | 3311 | 2483 | 1986 | 1655 | 1242 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 |
| | | | | 275 - 375 | $v_f$ (in/min) | 17.4 | 17.4 | 17.4 | 17.4 | 17.4 | 17.4 | 17.4 |
| N | E 18 | 1.00 | 1.00 | 500 | n (rev/min) | 15280 | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 |
| | | | | 400 - 600 | $v_f$ (in/min) | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.50 | 0.25 | 400 | n (rev/min) | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0012 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
| | | | | 300 - 500 | $v_f$ (in/min) | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 |
| | E 3 - 4 | 1.50 | 0.25 | 325 | n (rev/min) | 9932 | 4966 | 3311 | 2483 | 1986 | 1655 | 1242 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 275 - 375 | $v_f$ (in/min) | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 |
| | E 5 - 6 | 1.00 | 0.25 | 200 | n (rev/min) | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 180 - 220 | $v_f$ (in/min) | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 |
| K | E 12 - 13 | 1.50 | 0.25 | 270 | n (rev/min) | 8251 | 4126 | 2750 | 2063 | 1650 | 1375 | 1031 |
| | | | | | $f_z$ (in) | 0.0007 | 0.0015 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |
| | | | | 200 - 340 | $v_f$ (in/min) | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 |
| | E 14 - 15 | 1.00 | 0.25 | 145 | n (rev/min) | 4431 | 2216 | 1477 | 1108 | 886 | 739 | 554 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 95 - 195 | $v_f$ (in/min) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| N | E 18 | 1.50 | 0.25 | 500 | n (rev/min) | 15280 | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 |
| | | | | 400 - 600 | $v_f$ (in/min) | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**STS430M / STR430M / STB430M**

| SLOTTING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ X Dc | $v_c$ (m / min) | | $Z_n = 4$ | | | | | | | |
| | | | | | | 4 | 6 | 8 | 10 | 12 | 14 | 16 |
| P | E 1 - 2 | 1.00 | 1.00 | 122 | n (rev/min) | 9710 | 6470 | 4850 | 3880 | 3240 | 2770 | 2430 |
| | | | | | $f_z$ (mm) | 0.015 | 0.023 | 0.031 | 0.038 | 0.046 | 0.054 | 0.061 |
| | | | | 91 - 152 | $v_f$ (mm/min) | 597 | 596 | 596 | 596 | 597 | 596 | 597 |
| | E 3 - 4 | 1.00 | 1.00 | 99 | n (rev/min) | 7880 | 5250 | 3940 | 3150 | 2630 | 2250 | 1970 |
| | | | | | $f_z$ (mm) | 0.011 | 0.017 | 0.022 | 0.028 | 0.034 | 0.039 | 0.045 |
| | | | | 84 - 114 | $v_f$ (mm/min) | 353 | 353 | 353 | 353 | 353 | 353 | 353 |
| | E 5 - 6 | 0.50 | 1.00 | 61 | n (rev/min) | 4850 | 3240 | 2430 | 1940 | 1620 | 1390 | 1210 |
| | | | | | $f_z$ (mm) | 0.009 | 0.013 | 0.017 | 0.022 | 0.026 | 0.030 | 0.035 |
| | | | | 55 - 67 | $v_f$ (mm/min) | 168 | 168 | 168 | 168 | 168 | 168 | 167 |
| K | E 12 - 13 | 1.00 | 1.00 | 107 | n (rev/min) | 8510 | 5680 | 4260 | 3410 | 2840 | 2430 | 2130 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 |
| | | | | 85 - 128 | $v_f$ (mm/min) | 613 | 613 | 613 | 614 | 613 | 612 | 613 |
| | E 14 - 15 | 0.40 | 1.00 | 99 | n (rev/min) | 7880 | 5250 | 3940 | 3150 | 2630 | 2250 | 1970 |
| | | | | | $f_z$ (mm) | 0.014 | 0.021 | 0.028 | 0.035 | 0.042 | 0.049 | 0.056 |
| | | | | 84 - 114 | $v_f$ (mm/min) | 441 | 441 | 441 | 441 | 442 | 441 | 441 |
| N | E 18 | 1.00 | 1.00 | 152 | n (rev/min) | 12100 | 8060 | 6050 | 4840 | 4030 | 3460 | 3020 |
| | | | | | $f_z$ (mm) | 0.010 | 0.015 | 0.020 | 0.025 | 0.030 | 0.035 | 0.040 |
| | | | | 122 - 183 | $v_f$ (mm/min) | 484 | 484 | 484 | 484 | 484 | 484 | 483 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.50 | 0.25 | 122 | n (rev/min) | 9710 | 6470 | 4850 | 3880 | 3240 | 2770 | 2430 |
| | | | | | $f_z$ (mm) | 0.019 | 0.029 | 0.038 | 0.048 | 0.058 | 0.067 | 0.077 |
| | | | | 91 - 152 | $v_f$ (mm/min) | 746 | 745 | 745 | 745 | 746 | 745 | 746 |
| | E 3 - 4 | 1.50 | 0.25 | 99 | n (rev/min) | 7880 | 5250 | 3940 | 3150 | 2630 | 2250 | 1970 |
| | | | | | $f_z$ (mm) | 0.011 | 0.017 | 0.022 | 0.028 | 0.034 | 0.039 | 0.045 |
| | | | | 84 - 114 | $v_f$ (mm/min) | 353 | 353 | 353 | 353 | 353 | 353 | 353 |
| | E 5 - 6 | 1.00 | 0.25 | 61 | n (rev/min) | 4850 | 3240 | 2430 | 1940 | 1620 | 1390 | 1210 |
| | | | | | $f_z$ (mm) | 0.010 | 0.014 | 0.019 | 0.024 | 0.029 | 0.034 | 0.038 |
| | | | | 55 - 67 | $v_f$ (mm/min) | 186 | 187 | 187 | 186 | 187 | 187 | 186 |
| K | E 12 - 13 | 1.50 | 0.25 | 82 | n (rev/min) | 6530 | 4350 | 3260 | 2610 | 2180 | 1860 | 1630 |
| | | | | | $f_z$ (mm) | 0.023 | 0.035 | 0.046 | 0.058 | 0.070 | 0.081 | 0.093 |
| | | | | 61 - 104 | $v_f$ (mm/min) | 606 | 606 | 605 | 606 | 607 | 604 | 605 |
| | E 14 - 15 | 1.00 | 0.25 | 44 | n (rev/min) | 3500 | 2330 | 1750 | 1400 | 1170 | 1000 | 880 |
| | | | | | $f_z$ (mm) | 0.014 | 0.020 | 0.027 | 0.034 | 0.041 | 0.048 | 0.054 |
| | | | | 29 - 59 | $v_f$ (mm/min) | 190 | 190 | 190 | 190 | 191 | 190 | 191 |
| N | E 18 | 1.50 | 0.25 | 152 | n (rev/min) | 12100 | 8060 | 6050 | 4840 | 4030 | 3460 | 3020 |
| | | | | | $f_z$ (mm) | 0.010 | 0.015 | 0.020 | 0.025 | 0.030 | 0.035 | 0.040 |
| | | | | 122 - 183 | $v_f$ (mm/min) | 484 | 484 | 484 | 484 | 484 | 484 | 483 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**STBN430 / STRN430**

| SLOTTING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 0.50 | 1.00 | 320 | n (rev/min) | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0021 | 0.0028 |
| | | | | 220 - 420 | $v_f$ (in/min) | 13.6 | 13.6 | 13.6 | 13.6 | 13.6 | 13.6 | 13.6 |
| | E 3 - 4 | 0.50 | 1.00 | 260 | n (rev/min) | 7946 | 3973 | 2649 | 1986 | 1589 | 1324 | 993 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 110 - 210 | $v_f$ (in/min) | 8.9 | 8.9 | 8.9 | 8.9 | 8.9 | 8.9 | 8.9 |
| | E 5 - 6 | 0.50 | 1.00 | 160 | n (rev/min) | 4890 | 2445 | 1630 | 1222 | 978 | 815 | 611 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0017 |
| | | | | 60 - 100 | $v_f$ (in/min) | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| K | E 12 - 13 | 0.50 | 1.00 | 280 | n (rev/min) | 8557 | 4278 | 2852 | 2139 | 1711 | 1426 | 1070 |
| | | | | | $f_z$ (in) | 0.0005 | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | | | 146 - 286 | $v_f$ (in/min) | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 |
| | E 14 - 15 | 0.40 | 1.00 | 260 | n (rev/min) | 7946 | 3973 | 2649 | 1986 | 1589 | 1324 | 993 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 76 - 156 | $v_f$ (in/min) | 11.1 | 11.1 | 11.1 | 11.1 | 11.1 | 11.1 | 11.1 |
| N | E 18 | 0.50 | 1.00 | 400 | n (rev/min) | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 |
| | | | | 300 - 500 | $v_f$ (in/min) | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.00 | 0.25 | 320 | n (rev/min) | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 220 - 420 | $v_f$ (in/min) | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 |
| | E 3 - 4 | 1.00 | 0.25 | 260 | n (rev/min) | 7946 | 3973 | 2649 | 1986 | 1589 | 1324 | 993 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0018 |
| | | | | 110 - 210 | $v_f$ (in/min) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| | E 5 - 6 | 1.00 | 0.25 | 160 | n (rev/min) | 4890 | 2445 | 1630 | 1222 | 978 | 815 | 611 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0010 | 0.0014 |
| | | | | 60 - 100 | $v_f$ (in/min) | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| K | E 12 - 13 | 1.00 | 0.25 | 280 | n (rev/min) | 8557 | 4278 | 2852 | 2139 | 1711 | 1426 | 1070 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 146 - 286 | $v_f$ (in/min) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| | E 14 - 15 | 1.00 | 0.25 | 260 | n (rev/min) | 7946 | 3973 | 2649 | 1986 | 1589 | 1324 | 993 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 76 - 156 | $v_f$ (in/min) | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 |
| N | E 18 | 1.00 | 0.25 | 400 | n (rev/min) | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| | | | | 300 - 500 | $v_f$ (in/min) | 9.8 | 9.8 | 9.8 | 9.8 | 9.8 | 9.8 | 9.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**STR440 / STB440**

| SLOTTING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| M | E 8 - 9 | 0.50 | 1.00 | 370 | n (rev/min) | 11307 | 5654 | 3769 | 2827 | 2261 | 1885 | 1413 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 270 - 470 | $v_f$ (in/min) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 |
| | E 10 - 11 | 0.40 | 1.00 | 300 | n (rev/min) | 9168 | 4584 | 3056 | 2292 | 1834 | 1528 | 1146 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 250 - 350 | $v_f$ (in/min) | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 |
| S | E 19 | 0.30 | 1.00 | 90 | n (rev/min) | 2750 | 1375 | 917 | 688 | 550 | 458 | 344 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| | | | | 70 - 110 | $v_f$ (in/min) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| | E 20 | 0.30 | 1.00 | 90 | n (rev/min) | 2750 | 1375 | 917 | 688 | 550 | 458 | 344 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| | | | | 70 - 110 | $v_f$ (in/min) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| | E 21 | 0.30 | 1.00 | 90 | n (rev/min) | 2750 | 1375 | 917 | 688 | 550 | 458 | 344 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| | | | | 70 - 110 | $v_f$ (in/min) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| | E 22 | 0.40 | 1.00 | 120 | n (rev/min) | 3667 | 1834 | 1222 | 917 | 733 | 611 | 458 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 100 - 140 | $v_f$ (in/min) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | E 8 - 9 | 1.00 | 0.40 | 370 | n (rev/min) | 11307 | 5654 | 3769 | 2827 | 2261 | 1885 | 1413 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 270 - 470 | $v_f$ (in/min) | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 |
| | E 10 - 11 | 1.00 | 0.30 | 300 | n (rev/min) | 9168 | 4584 | 3056 | 2292 | 1834 | 1528 | 1146 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0017 | 0.0023 |
| | | | | 250 - 350 | $v_f$ (in/min) | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 |
| S | E 19 | 1.00 | 0.15 | 90 | n (rev/min) | 2750 | 1375 | 917 | 688 | 550 | 458 | 344 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 70 - 110 | $v_f$ (in/min) | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| | E 20 | 1.00 | 0.15 | 90 | n (rev/min) | 2750 | 1375 | 917 | 688 | 550 | 458 | 344 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 70 - 110 | $v_f$ (in/min) | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| | E 21 | 1.00 | 0.15 | 90 | n (rev/min) | 2750 | 1375 | 917 | 688 | 550 | 458 | 344 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 70 - 110 | $v_f$ (in/min) | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| | E 22 | 1.00 | 0.30 | 120 | n (rev/min) | 3667 | 1834 | 1222 | 917 | 733 | 611 | 458 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 100 - 140 | $v_f$ (in/min) | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**STR440M / STB440M**

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 4$ | | | | | | | | | |
| | | | | | | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 20 | 25 |
| M | E 8 - 9 | 0.50 | 1.00 | 113 | n (rev/min) | 8990 | 5990 | 4500 | 3600 | 3000 | 2570 | 2250 | 1800 | 1440 |
| | | | | | $f_z$ (mm) | 0.012 | 0.018 | 0.024 | 0.030 | 0.036 | 0.042 | 0.048 | 0.060 | 0.075 |
| | | | | 82 - 143 | $v_f$ (mm/min) | 432 | 431 | 432 | 432 | 432 | 432 | 432 | 432 | 432 |
| | E 10 - 11 | 0.40 | 1.00 | 91 | n (rev/min) | 7240 | 4830 | 3620 | 2900 | 2410 | 2070 | 1810 | 1450 | 1160 |
| | | | | | $f_z$ (mm) | 0.012 | 0.018 | 0.024 | 0.030 | 0.036 | 0.042 | 0.048 | 0.060 | 0.075 |
| | | | | 76 - 107 | $v_f$ (mm/min) | 348 | 348 | 348 | 348 | 348 | 348 | 348 | 348 | 348 |
| S | E 19 | 0.30 | 1.00 | 27 | n (rev/min) | 2150 | 1430 | 1070 | 860 | 720 | 610 | 540 | 430 | 340 |
| | | | | | $f_z$ (mm) | 0.006 | 0.010 | 0.013 | 0.016 | 0.019 | 0.022 | 0.026 | 0.032 | 0.040 |
| | | | | 21 - 34 | $v_f$ (mm/min) | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 54 |
| | E 20 | 0.30 | 1.00 | 27 | n (rev/min) | 2150 | 1430 | 1070 | 860 | 720 | 610 | 540 | 430 | 340 |
| | | | | | $f_z$ (mm) | 0.006 | 0.010 | 0.013 | 0.016 | 0.019 | 0.022 | 0.026 | 0.032 | 0.040 |
| | | | | 21 - 34 | $v_f$ (mm/min) | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 54 |
| | E 21 | 0.30 | 1.00 | 27 | n (rev/min) | 2150 | 1430 | 1070 | 860 | 720 | 610 | 540 | 430 | 340 |
| | | | | | $f_z$ (mm) | 0.006 | 0.010 | 0.013 | 0.016 | 0.019 | 0.022 | 0.026 | 0.032 | 0.040 |
| | | | | 21 - 34 | $v_f$ (mm/min) | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 54 |
| | E 22 | 0.40 | 1.00 | 37 | n (rev/min) | 2940 | 1960 | 1470 | 1180 | 980 | 840 | 740 | 590 | 470 |
| | | | | | $f_z$ (mm) | 0.010 | 0.014 | 0.019 | 0.024 | 0.029 | 0.034 | 0.038 | 0.048 | 0.060 |
| | | | | 30 - 43 | $v_f$ (mm/min) | 113 | 113 | 113 | 113 | 113 | 113 | 114 | 113 | 113 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | E 8 - 9 | 1.00 | 0.40 | 113 | n (rev/min) | 8990 | 5990 | 4500 | 3600 | 3000 | 2570 | 2250 | 1800 | 1440 |
| | | | | | $f_z$ (mm) | 0.011 | 0.017 | 0.022 | 0.028 | 0.034 | 0.039 | 0.045 | 0.056 | 0.070 |
| | | | | 82 - 143 | $v_f$ (mm/min) | 403 | 403 | 403 | 403 | 403 | 403 | 403 | 403 | 403 |
| | E 10 - 11 | 1.00 | 0.30 | 91 | n (rev/min) | 7240 | 4830 | 3620 | 2900 | 2410 | 2070 | 1810 | 1450 | 1160 |
| | | | | | $f_z$ (mm) | 0.009 | 0.014 | 0.018 | 0.023 | 0.028 | 0.032 | 0.037 | 0.046 | 0.058 |
| | | | | 76 - 107 | $v_f$ (mm/min) | 266 | 267 | 266 | 267 | 266 | 267 | 266 | 267 | 267 |
| S | E 19 | 1.00 | 0.15 | 27 | n (rev/min) | 2150 | 1430 | 1070 | 860 | 720 | 610 | 540 | 430 | 340 |
| | | | | | $f_z$ (mm) | 0.011 | 0.017 | 0.022 | 0.028 | 0.034 | 0.039 | 0.045 | 0.056 | 0.070 |
| | | | | 21 - 34 | $v_f$ (mm/min) | 96 | 96 | 96 | 96 | 97 | 96 | 97 | 96 | 95 |
| | E 20 | 1.00 | 0.15 | 27 | n (rev/min) | 2150 | 1430 | 1070 | 860 | 720 | 610 | 540 | 430 | 340 |
| | | | | | $f_z$ (mm) | 0.011 | 0.017 | 0.022 | 0.028 | 0.034 | 0.039 | 0.045 | 0.056 | 0.070 |
| | | | | 21 - 34 | $v_f$ (mm/min) | 96 | 96 | 96 | 96 | 97 | 96 | 97 | 96 | 95 |
| | E 21 | 1.00 | 0.15 | 27 | n (rev/min) | 2150 | 1430 | 1070 | 860 | 720 | 610 | 540 | 430 | 340 |
| | | | | | $f_z$ (mm) | 0.011 | 0.017 | 0.022 | 0.028 | 0.034 | 0.039 | 0.045 | 0.056 | 0.070 |
| | | | | 21 - 34 | $v_f$ (mm/min) | 96 | 96 | 96 | 96 | 97 | 96 | 97 | 96 | 95 |
| | E 22 | 1.00 | 0.30 | 37 | n (rev/min) | 2940 | 1960 | 1470 | 1180 | 980 | 840 | 740 | 590 | 470 |
| | | | | | $f_z$ (mm) | 0.012 | 0.018 | 0.024 | 0.030 | 0.036 | 0.042 | 0.048 | 0.060 | 0.075 |
| | | | | 30 - 43 | $v_f$ (mm/min) | 141 | 141 | 141 | 142 | 141 | 141 | 142 | 142 | 141 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**STRN440 / STBN440**

| SLOTTING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| M | E 8 - 9 | 0.50 | 1.00 | 296 | n (rev/min) | 9046 | 4523 | 3015 | 2261 | 1809 | 1508 | 1131 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0018 |
| | | | | 266 - 326 | $v_f$ (in/min) | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 |
| | E 10 - 11 | 0.40 | 1.00 | 240 | n (rev/min) | 7334 | 3667 | 2445 | 1834 | 1467 | 1222 | 917 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0015 |
| | | | | 210 - 270 | $v_f$ (in/min) | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 |
| S | E 19 | 0.30 | 1.00 | 72 | n (rev/min) | 2200 | 1100 | 733 | 550 | 440 | 367 | 275 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0008 | 0.0010 | 0.0013 |
| | | | | 52 - 92 | $v_f$ (in/min) | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| | E 20 | 0.30 | 1.00 | 72 | n (rev/min) | 2200 | 1100 | 733 | 550 | 440 | 367 | 275 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0008 | 0.0010 | 0.0013 |
| | | | | 52 - 92 | $v_f$ (in/min) | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| | E 21 | 0.30 | 1.00 | 72 | n (rev/min) | 2200 | 1100 | 733 | 550 | 440 | 367 | 275 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0008 | 0.0010 | 0.0013 |
| | | | | 52 - 92 | $v_f$ (in/min) | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| | E 22 | 0.40 | 1.00 | 96 | n (rev/min) | 2934 | 1467 | 978 | 733 | 587 | 489 | 367 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0019 |
| | | | | 76 - 116 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | E 8 - 9 | 1.00 | 0.40 | 370 | n (rev/min) | 11307 | 5654 | 3769 | 2827 | 2261 | 1885 | 1413 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 340 - 400 | $v_f$ (in/min) | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 |
| | E 10 - 11 | 1.00 | 0.30 | 300 | n (rev/min) | 9168 | 4584 | 3056 | 2292 | 1834 | 1528 | 1146 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0018 |
| | | | | 270 - 330 | $v_f$ (in/min) | 8.4 | 8.4 | 8.4 | 8.4 | 8.4 | 8.4 | 8.4 |
| S | E 19 | 1.00 | 0.15 | 90 | n (rev/min) | 2750 | 1375 | 917 | 688 | 550 | 458 | 344 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 70 - 110 | $v_f$ (in/min) | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
| | E 20 | 1.00 | 0.15 | 90 | n (rev/min) | 2750 | 1375 | 917 | 688 | 550 | 458 | 344 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 70 - 110 | $v_f$ (in/min) | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
| | E 21 | 1.00 | 0.15 | 80 | n (rev/min) | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 60 - 100 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| | E 22 | 1.00 | 0.30 | 120 | n (rev/min) | 3667 | 1834 | 1222 | 917 | 733 | 611 | 458 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 100 - 140 | $v_f$ (in/min) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**STS540 / STR540**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 5$ | | | | | | | | | |
| | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.00 | 0.30 | 500 | n (rev/min) | 30560 | 15280 | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0012 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
| | | | | 450 - 550 | $v_f$ (mm/min) | 45.8 | 45.8 | 45.8 | 45.8 | 45.8 | 45.8 | 45.8 | 45.8 |
| | E 3 - 4 | 1.00 | 0.30 | 400 | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 350 - 450 | $v_f$ (mm/min) | 22.9 | 22.9 | 22.9 | 22.9 | 22.9 | 22.9 | 22.9 | 22.9 |
| | E 5 - 6 | 1.00 | 0.20 | 200 | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 150 - 250 | $v_f$ (mm/min) | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 |
| H | M / A / D 7a (48>52HRc) | 1.00 | 0.10 | 80 | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| | | | | 60 - 100 | $v_f$ (mm/min) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| M | E 8 - 9 | 1.00 | 0.20 | 380 | n (rev/min) | 23226 | 11613 | 5806 | 3871 | 2903 | 2323 | 1935 | 1452 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 330 - 430 | $v_f$ (mm/min) | 23.2 | 21.8 | 21.8 | 21.8 | 21.8 | 21.8 | 21.8 | 21.8 |
| | E 10 - 11 | 1.00 | 0.15 | 275 | n (rev/min) | 16808 | 8404 | 4202 | 2801 | 2101 | 1681 | 1401 | 1051 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 225 - 325 | $v_f$ (mm/min) | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 |
| K | E 12 - 13 | 1.00 | 0.50 | 500 | n (rev/min) | 30560 | 15280 | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 |
| | | | | 450 - 550 | $v_f$ (mm/min) | 53.5 | 53.5 | 53.5 | 53.5 | 53.5 | 53.5 | 53.5 | 53.5 |
| | E 12 - 13 | 1.00 | 0.30 | 215 | n (rev/min) | 13141 | 6570 | 3285 | 2190 | 1643 | 1314 | 1095 | 821 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 165 - 265 | $v_f$ (mm/min) | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 |
| S | E 19 | 1.00 | 0.20 | 100 | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 80 - 120 | $v_f$ (mm/min) | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| | E 20 | 1.00 | 0.20 | 100 | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 80 - 120 | $v_f$ (mm/min) | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| | E 21 | 1.00 | 0.20 | 100 | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 80 - 120 | $v_f$ (mm/min) | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| | E 22 | 1.00 | 0.20 | 170 | n (rev/min) | 10390 | 5195 | 2598 | 1732 | 1299 | 1039 | 866 | 649 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 120 - 220 | $v_f$ (mm/min) | 9.7 | 9.7 | 9.7 | 9.7 | 9.7 | 9.7 | 9.7 | 9.7 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**STS540M / STR540M**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 5$ 4 | 6 | 8 | 10 | 12 | 14 | 16 |
| P | E 1 - 2 | 1.00 | 0.30 | 152 | n (rev/min) | 12100 | 8060 | 6050 | 4840 | 4030 | 3460 | 3020 |
| | | | | | $f_z$ (mm) | 0.019 | 0.029 | 0.038 | 0.048 | 0.058 | 0.067 | 0.077 |
| | | | | 137 - 168 | $v_f$ (mm/min) | 1162 | 1161 | 1162 | 1162 | 1161 | 1163 | 1160 |
| | E 3 - 4 | 1.00 | 0.30 | 122 | n (rev/min) | 9710 | 6470 | 4850 | 3880 | 3240 | 2770 | 2430 |
| | | | | | $f_z$ (mm) | 0.012 | 0.018 | 0.024 | 0.030 | 0.036 | 0.042 | 0.048 |
| | | | | 107 - 137 | $v_f$ (mm/min) | 583 | 582 | 582 | 582 | 583 | 582 | 583 |
| | E 5 - 6 | 1.00 | 0.20 | 61 | n (rev/min) | 4850 | 3240 | 2430 | 1940 | 1620 | 1390 | 1210 |
| | | | | | $f_z$ (mm) | 0.010 | 0.014 | 0.019 | 0.024 | 0.029 | 0.034 | 0.038 |
| | | | | 46 - 76 | $v_f$ (mm/min) | 233 | 233 | 233 | 233 | 233 | 234 | 232 |
| H | M / A / D 7a (48>52HRc) | 1.00 | 0.10 | 24 | n (rev/min) | 1910 | 1270 | 950 | 760 | 640 | 550 | 480 |
| | | | | | $f_z$ (mm) | 0.006 | 0.010 | 0.013 | 0.016 | 0.019 | 0.022 | 0.026 |
| | | | | 18 - 30 | $v_f$ (mm/min) | 61 | 61 | 61 | 61 | 61 | 62 | 61 |
| M | E 8 - 9 | 1.00 | 0.20 | 116 | n (rev/min) | 9230 | 6150 | 4620 | 3690 | 3080 | 2640 | 2310 |
| | | | | | $f_z$ (mm) | 0.013 | 0.018 | 0.024 | 0.030 | 0.036 | 0.042 | 0.048 |
| | | | | 101 - 131 | $v_f$ (mm/min) | 591 | 554 | 554 | 554 | 554 | 554 | 554 |
| | E 10 - 11 | 1.00 | 0.15 | 84 | n (rev/min) | 6680 | 4460 | 3340 | 2670 | 2230 | 1910 | 1670 |
| | | | | | $f_z$ (mm) | 0.012 | 0.018 | 0.024 | 0.030 | 0.036 | 0.042 | 0.048 |
| | | | | 69 - 99 | $v_f$ (mm/min) | 401 | 401 | 401 | 401 | 401 | 401 | 401 |
| K | E 12 - 13 | 1.00 | 0.50 | 152 | n (rev/min) | 12100 | 8060 | 6050 | 4840 | 4030 | 3460 | 3020 |
| | | | | | $f_z$ (mm) | 0.022 | 0.034 | 0.045 | 0.056 | 0.067 | 0.078 | 0.090 |
| | | | | 137 - 168 | $v_f$ (mm/min) | 1355 | 1354 | 1355 | 1355 | 1354 | 1356 | 1353 |
| | E 12 - 13 | 1.00 | 0.30 | 66 | n (rev/min) | 5250 | 3500 | 2630 | 2100 | 1750 | 1500 | 1310 |
| | | | | | $f_z$ (mm) | 0.012 | 0.018 | 0.024 | 0.030 | 0.036 | 0.042 | 0.048 |
| | | | | 50 - 81 | $v_f$ (mm/min) | 315 | 315 | 316 | 315 | 315 | 315 | 314 |
| S | E 19 | 1.00 | 0.10 | 30 | n (rev/min) | 2390 | 1590 | 1190 | 950 | 800 | 680 | 600 |
| | | | | | $f_z$ (mm) | 0.012 | 0.018 | 0.024 | 0.030 | 0.036 | 0.042 | 0.048 |
| | | | | 24 - 37 | $v_f$ (mm/min) | 143 | 143 | 143 | 143 | 144 | 143 | 144 |
| | E 20 | 1.00 | 0.10 | 30 | n (rev/min) | 2390 | 1590 | 1190 | 950 | 800 | 680 | 600 |
| | | | | | $f_z$ (mm) | 0.012 | 0.018 | 0.024 | 0.030 | 0.036 | 0.042 | 0.048 |
| | | | | 24 - 37 | $v_f$ (mm/min) | 143 | 143 | 143 | 143 | 144 | 143 | 144 |
| | E 21 | 1.00 | 0.10 | 30 | n (rev/min) | 2390 | 1590 | 1190 | 950 | 800 | 680 | 600 |
| | | | | | $f_z$ (mm) | 0.012 | 0.018 | 0.024 | 0.030 | 0.036 | 0.042 | 0.048 |
| | | | | 24 - 37 | $v_f$ (mm/min) | 143 | 143 | 143 | 143 | 144 | 143 | 144 |
| | E 22 | 1.00 | 0.20 | 52 | n (rev/min) | 4140 | 2760 | 2070 | 1660 | 1380 | 1180 | 1030 |
| | | | | | $f_z$ (mm) | 0.012 | 0.018 | 0.024 | 0.030 | 0.036 | 0.042 | 0.048 |
| | | | | 37 - 67 | $v_f$ (mm/min) | 248 | 248 | 248 | 249 | 248 | 248 | 247 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

# ELITE HIGH PERFORMANCE- A245

SOLID CARBIDE

HELIX 45°

SQUARE END

CENTER CUTTING

- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for slotting in aluminum and non-ferrous materials

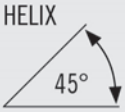
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N61350 | A245-0.125-D2-S.0-Z2 | 1/8 | 1/8 | 1/4 | 1-1/2 | 2 | |
| N61442 | A245-0.125-D2-S.0-Z2 | 1/8 | 1/8 | 1/4 | 1-1/2 | 2 | TiCN |
| N61351 | A245-0.125-D3-S.0-Z2 | 1/8 | 1/8 | 3/8 | 1-1/2 | 2 | |
| N61443 | A245-0.125-D3-S.0-Z2 | 1/8 | 1/8 | 3/8 | 1-1/2 | 2 | TiCN |
| N61352 | A245-0.156-F2-S.0-Z2 | 5/32 | 3/16 | 5/16 | 2 | 2 | |
| N61444 | A245-0.156-F2-S.0-Z2 | 5/32 | 3/16 | 5/16 | 2 | 2 | TiCN |
| N61353 | A245-0.156-F3-S.0-Z2 | 5/32 | 3/16 | 1/2 | 2 | 2 | |
| N61445 | A245-0.156-F3-S.0-Z2 | 5/32 | 3/16 | 1/2 | 2 | 2 | TiCN |
| N61354 | A245-0.188-D2-S.0-Z2 | 3/16 | 3/16 | 5/16 | 2 | 2 | |
| N61446 | A245-0.188-D2-S.0-Z2 | 3/16 | 3/16 | 5/16 | 2 | 2 | TiCN |
| N61355 | A245-0.188-D3-S.0-Z2 | 3/16 | 3/16 | 9/16 | 2 | 2 | |
| N61447 | A245-0.188-D3-S.0-Z2 | 3/16 | 3/16 | 9/16 | 2 | 2 | TiCN |
| N61357 | A245-0.219-F3-S.0-Z2 | 7/32 | 1/4 | 3/4 | 2-1/2 | 2 | |
| N61449 | A245-0.219-F3-S.0-Z2 | 7/32 | 1/4 | 3/4 | 2-1/2 | 2 | TiCN |
| N61358 | A245-0.250-D2-S.0-Z2 | 1/4 | 1/4 | 3/8 | 2-1/2 | 2 | |
| N61450 | A245-0.250-D2-S.0-Z2 | 1/4 | 1/4 | 3/8 | 2-1/2 | 2 | TiCN |
| N61359 | A245-0.250-D3-S.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | |
| N61451 | A245-0.250-D3-S.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | TiCN |
| N61360 | A245-0.250-D5-S.0-Z2 | 1/4 | 1/4 | 1-1/4 | 4 | 2 | |
| N61452 | A245-0.250-D5-S.0-Z2 | 1/4 | 1/4 | 1-1/4 | 4 | 2 | TiCN |
| N61363 | A245-0.313-D1-S.0-Z2 | 5/16 | 5/16 | 7/16 | 2-1/2 | 2 | |
| N61455 | A245-0.313-D1-S.0-Z2 | 5/16 | 5/16 | 7/16 | 2-1/2 | 2 | TiCN |
| N61364 | A245-0.313-D3-S.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | |
| N61456 | A245-0.313-D3-S.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | TiCN |
| N61365 | A245-0.313-D4-S.0-Z2 | 5/16 | 5/16 | 1-1/4 | 3-1/2 | 2 | |
| N61457 | A245-0.313-D4-S.0-Z2 | 5/16 | 5/16 | 1-1/4 | 3-1/2 | 2 | TiCN |
| N61369 | A245-0.375-D1-S.0-Z2 | 3/8 | 3/8 | 1/2 | 2-1/2 | 2 | |
| N61461 | A245-0.375-D1-S.0-Z2 | 3/8 | 3/8 | 1/2 | 2-1/2 | 2 | TiCN |
| N61370 | A245-0.375-D3-S.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | |
| N61462 | A245-0.375-D3-S.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | TiCN |
| N61371 | A245-0.375-D4-S.0-Z2 | 3/8 | 3/8 | 1-1/2 | 4 | 2 | |
| N61463 | A245-0.375-D4-S.0-Z2 | 3/8 | 3/8 | 1-1/2 | 4 | 2 | TiCN |
| N61378 | A245-0.500-D1-S.0-Z2 | 1/2 | 1/2 | 5/8 | 3 | 2 | |
| N61470 | A245-0.500-D1-S.0-Z2 | 1/2 | 1/2 | 5/8 | 3 | 2 | TiCN |
| N61379 | A245-0.500-D3-S.0-Z2 | 1/2 | 1/2 | 1-1/4 | 3 | 2 | |

**DISCOUNT CODE D43**

# ELITE HIGH PERFORMANCE- A245

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

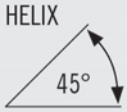
- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for slotting in aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N61471 | A245-0.500-D3-S.0-Z2 | 1/2 | 1/2 | 1-1/4 | 3 | 2 | TiCN |
| N61380 | A245-0.500-D4-S.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | |
| N61472 | A245-0.500-D4-S.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiCN |
| N61381 | A245-0.500-D6-S.0-Z2 | 1/2 | 1/2 | 3-1/8 | 6 | 2 | |
| N61473 | A245-0.500-D6-S.0-Z2 | 1/2 | 1/2 | 3-1/8 | 6 | 2 | TiCN |
| N61382 | A245-0.625-D1-S.0-Z2 | 5/8 | 5/8 | 3/4 | 3 | 2 | |
| N61474 | A245-0.625-D1-S.0-Z2 | 5/8 | 5/8 | 3/4 | 3 | 2 | TiCN |
| N61383 | A245-0.625-D3-S.0-Z2 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 2 | |
| N61475 | A245-0.625-D3-S.0-Z2 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 2 | TiCN |
| N61384 | A245-0.625-D4-S.0-Z2 | 5/8 | 5/8 | 2-1/2 | 5 | 2 | |
| N61476 | A245-0.625-D4-S.0-Z2 | 5/8 | 5/8 | 2-1/2 | 5 | 2 | TiCN |
| N61385 | A245-0.625-D6-S.0-Z2 | 5/8 | 5/8 | 3-3/4 | 6 | 2 | |
| N61477 | A245-0.625-D6-S.0-Z2 | 5/8 | 5/8 | 3-3/4 | 6 | 2 | TiCN |
| N61386 | A245-0.750-D1-S.0-Z2 | 3/4 | 3/4 | 1 | 3 | 2 | |
| N61478 | A245-0.750-D1-S.0-Z2 | 3/4 | 3/4 | 1 | 3 | 2 | TiCN |
| N61387 | A245-0.750-D2-S.0-Z2 | 3/4 | 3/4 | 1-5/8 | 4 | 2 | |
| N61479 | A245-0.750-D2-S.0-Z2 | 3/4 | 3/4 | 1-5/8 | 4 | 2 | TiCN |
| N61388 | A245-0.750-D3-S.0-Z2 | 3/4 | 3/4 | 2-1/4 | 5 | 2 | |
| N61480 | A245-0.750-D3-S.0-Z2 | 3/4 | 3/4 | 2-1/4 | 5 | 2 | TiCN |
| N61389 | A245-0.750-D4-S.0-Z2 | 3/4 | 3/4 | 3-1/4 | 6 | 2 | |
| N61481 | A245-0.750-D4-S.0-Z2 | 3/4 | 3/4 | 3-1/4 | 6 | 2 | TiCN |
| N61390 | A245-0.750-D5-S.0-Z2 | 3/4 | 3/4 | 4 | 6-1/2 | 2 | |
| N61482 | A245-0.750-D5-S.0-Z2 | 3/4 | 3/4 | 4 | 6-1/2 | 2 | TiCN |
| N61391 | A245-1.000-D1-S.0-Z2 | 1 | 1 | 1-1/4 | 4 | 2 | |
| N61483 | A245-1.000-D1-S.0-Z2 | 1 | 1 | 1-1/4 | 4 | 2 | TiCN |
| N61392 | A245-1.000-D2-S.0-Z2 | 1 | 1 | 2 | 5 | 2 | |
| N61484 | A245-1.000-D2-S.0-Z2 | 1 | 1 | 2 | 5 | 2 | TiCN |
| N61393 | A245-1.000-D3-S.0-Z2 | 1 | 1 | 2-5/8 | 6 | 2 | |
| N61485 | A245-1.000-D3-S.0-Z2 | 1 | 1 | 2-5/8 | 6 | 2 | TiCN |
| N61394 | A245-1.000-D4-S.0-Z2 | 1 | 1 | 3-1/4 | 6 | 2 | |
| N61486 | A245-1.000-D4-S.0-Z2 | 1 | 1 | 3-1/4 | 6 | 2 | TiCN |
| N61395 | A245-1.000-D5-S.0-Z2 | 1 | 1 | 4-1/8 | 7 | 2 | |
| N61487 | A245-1.000-D5-S.0-Z2 | 1 | 1 | 4-1/8 | 7 | 2 | TiCN |

# ELITE HIGH PERFORMANCE- A245R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

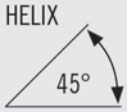
- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N90645 | A245R-0.375-D3-R010.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | TiCN | 0.010 |
| N90646 | A245R-0.375-D3-R020.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | TiCN | 0.020 |
| N90648 | A245R-0.375-D3-R030.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | TiCN | 0.030 |
| N90650 | A245R-0.375-D3-R060.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | TiCN | 0.060 |
| N90678 | A245R-0.500-D3-R010.0-Z2 | 1/2 | 1/2 | 1-1/4 | 3 | 2 | TiCN | 0.010 |
| N90679 | A245R-0.500-D3-R020.0-Z2 | 1/2 | 1/2 | 1-1/4 | 3 | 2 | TiCN | 0.020 |
| N90680 | A245R-0.500-D3-R030.0-Z2 | 1/2 | 1/2 | 1-1/4 | 3 | 2 | TiCN | 0.030 |
| N90682 | A245R-0.500-D3-R060.0-Z2 | 1/2 | 1/2 | 1-1/4 | 3 | 2 | TiCN | 0.060 |
| N90683 | A245R-0.500-D3-R090.0-Z2 | 1/2 | 1/2 | 1-1/4 | 3 | 2 | TiCN | 0.090 |
| N90684 | A245R-0.500-D3-R125.0-Z2 | 1/2 | 1/2 | 1-1/4 | 3 | 2 | TiCN | 0.125 |
| N90685 | A245R-0.500-D4-R010.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiCN | 0.010 |
| N90686 | A245R-0.500-D4-R020.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiCN | 0.020 |
| N90687 | A245R-0.500-D4-R030.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiCN | 0.030 |
| N90689 | A245R-0.500-D4-R060.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiCN | 0.060 |
| N90690 | A245R-0.500-D4-R090.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiCN | 0.090 |
| N90691 | A245R-0.500-D4-R125.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiCN | 0.125 |
| N90721 | A245R-0.750-D3-R010.0-Z2 | 3/4 | 3/4 | 2-1/4 | 5 | 2 | TiCN | 0.010 |
| N90722 | A245R-0.750-D3-R020.0-Z2 | 3/4 | 3/4 | 2-1/4 | 5 | 2 | TiCN | 0.020 |
| N90723 | A245R-0.750-D3-R030.0-Z2 | 3/4 | 3/4 | 2-1/4 | 5 | 2 | TiCN | 0.030 |
| N90725 | A245R-0.750-D3-R060.0-Z2 | 3/4 | 3/4 | 2-1/4 | 5 | 2 | TiCN | 0.060 |
| N90726 | A245R-0.750-D3-R090.0-Z2 | 3/4 | 3/4 | 2-1/4 | 5 | 2 | TiCN | 0.090 |
| N90727 | A245R-0.750-D3-R125.0-Z2 | 3/4 | 3/4 | 2-1/4 | 5 | 2 | TiCN | 0.125 |
| N90729 | A245R-0.750-D5-R010.0-Z2 | 3/4 | 3/4 | 4 | 6-1/2 | 2 | TiCN | 0.010 |
| N90730 | A245R-0.750-D5-R020.0-Z2 | 3/4 | 3/4 | 4 | 6-1/2 | 2 | TiCN | 0.020 |
| N90731 | A245R-0.750-D5-R030.0-Z2 | 3/4 | 3/4 | 4 | 6-1/2 | 2 | TiCN | 0.030 |
| N90733 | A245R-0.750-D5-R060.0-Z2 | 3/4 | 3/4 | 4 | 6-1/2 | 2 | TiCN | 0.060 |
| N90734 | A245R-0.750-D5-R090.0-Z2 | 3/4 | 3/4 | 4 | 6-1/2 | 2 | TiCN | 0.090 |
| N90735 | A245R-0.750-D5-R125.0-Z2 | 3/4 | 3/4 | 4 | 6-1/2 | 2 | TiCN | 0.125 |

# ELITE HIGH PERFORMANCE- AB245

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N66070 | AB245-0.250-D2-B.0-Z2 | 1/4 | 1/4 | 3/8 | 2-1/2 | 2 | |
| N66102 | AB245-0.250-D2-B.0-Z2 | 1/4 | 1/4 | 3/8 | 2-1/2 | 2 | TiCN |
| N66071 | AB245-0.250-D3-B.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | |
| N66103 | AB245-0.250-D3-B.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | TiCN |
| N66073 | AB245-0.313-D3-B.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | |
| N66105 | AB245-0.313-D3-B.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | TiCN |
| N66074 | AB245-0.375-D1-B.0-Z2 | 3/8 | 3/8 | 1/2 | 2-1/2 | 2 | |
| N66106 | AB245-0.375-D1-B.0-Z2 | 3/8 | 3/8 | 1/2 | 2-1/2 | 2 | TiCN |
| N66075 | AB245-0.375-D3-B.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | |
| N66107 | AB245-0.375-D3-B.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | TiCN |
| N66078 | AB245-0.500-D1-B.0-Z2 | 1/2 | 1/2 | 5/8 | 3 | 2 | |
| N66110 | AB245-0.500-D1-B.0-Z2 | 1/2 | 1/2 | 5/8 | 3 | 2 | TiCN |
| N66079 | AB245-0.500-D3-B.0-Z2 | 1/2 | 1/2 | 1-1/4 | 3 | 2 | |
| N66111 | AB245-0.500-D3-B.0-Z2 | 1/2 | 1/2 | 1-1/4 | 3 | 2 | TiCN |
| N66083 | AB245-0.750-D2-B.0-Z2 | 3/4 | 3/4 | 1-5/8 | 4 | 2 | |
| N66115 | AB245-0.750-D2-B.0-Z2 | 3/4 | 3/4 | 1-5/8 | 4 | 2 | TiCN |
| N66084 | AB245-1.000-D1-B.0-Z2 | 1 | 1 | 1-1/4 | 4 | 2 | |
| N66116 | AB245-1.000-D1-B.0-Z2 | 1 | 1 | 1-1/4 | 4 | 2 | TiCN |
| N66085 | AB245-1.000-D2-B.0-Z2 | 1 | 1 | 2 | 5 | 2 | |
| N66117 | AB245-1.000-D2-B.0-Z2 | 1 | 1 | 2 | 5 | 2 | TiCN |

# ELITE HIGH PERFORMANCE- AN245

SOLID CARBIDE

HELIX 45°

SQUARE END

CENTER CUTTING

- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Designed for aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|
| N57993 | AN245-0.375-E5-S.0-Z2 | 3/8 | 3/8 | 1/2 | 4 | 2 | TiCN | 2-1/8 | 0.360 |
| N57996 | AN245-0.500-E7-S.0-Z2 | 1/2 | 1/2 | 5/8 | 4 | 2 | TiCN | 2-1/8 | 0.480 |
| N57997 | AN245-0.500-E9-S.0-Z2 | 1/2 | 1/2 | 5/8 | 8 | 2 | TiCN | 3-3/8 | 0.480 |
| N57999 | AN245-0.500-E10-S.0-Z2 | 1/2 | 1/2 | 3/4 | 6 | 2 | TiCN | 4 | 0.480 |
| N57998 | AN245-0.500-E8-S.0-Z2 | 1/2 | 1/2 | 3/4 | 6 | 2 | TiCN | 6 | 0.480 |
| N58001 | AN245-0.625-E7-S.0-Z2 | 5/8 | 5/8 | 3/4 | 5 | 2 | TiCN | 2-3/8 | 0.600 |
| N58006 | AN245-0.750-E9-S.0-Z2 | 3/4 | 3/4 | 1 | 5 | 2 | TiCN | 2-1/2 | 0.720 |
| N58009 | AN245-0.750-E11-S.0-Z2 | 3/4 | 3/4 | 1 | 6 | 2 | TiCN | 4 | 0.720 |
| N58010 | AN245-0.750-E12-S.0-Z2 | 3/4 | 3/4 | 1 | 8 | 2 | TiCN | 6 | 0.720 |

# ELITE HIGH PERFORMANCE- ANB245

SOLID CARBIDE

HELIX 45°

BALL END

CENTER CUTTING

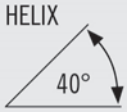
- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Designed for aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|
| N58028 | ANB245-0.375-E2-B.0-Z2 | 3/8 | 3/8 | 3/4 | 4 | 2 | | 2-1/8 | 0.360 |
| N58033 | ANB245-0.375-E2-B.0-Z2 | 3/8 | 3/8 | 3/4 | 4 | 2 | TiCN | 2-1/8 | 0.360 |
| N58029 | ANB245-0.500-E2-B.0-Z2 | 1/2 | 1/2 | 1 | 6 | 2 | | 4-1/8 | 0.480 |
| N58034 | ANB245-0.500-E2-B.0-Z2 | 1/2 | 1/2 | 1 | 6 | 2 | TiCN | 4-1/8 | 0.480 |
| N58030 | ANB245-0.625-E2-B.0-Z2 | 5/8 | 5/8 | 1-1/4 | 6 | 2 | | 4 | 0.600 |
| N58035 | ANB245-0.625-E2-B.0-Z2 | 5/8 | 5/8 | 1-1/4 | 6 | 2 | TiCN | 4 | 0.600 |

# ELITE HIGH PERFORMANCE- AN340

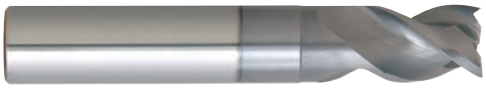
SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING



- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for high volume material removal in aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|---|
| N57881 | AN340-0.188-E1-R010.0-Z3 | 3/16 | 3/16 | 1/4 | 2 | 3 | | 0.010 | 9/16 | 0.178 |
| N57910 | AN340-0.188-E1-R010.0-Z3 | 3/16 | 3/16 | 1/4 | 2 | 3 | TiCN | 0.010 | 9/16 | 0.178 |
| N57882 | AN340-0.188-E2-R010.0-Z3 | 3/16 | 3/16 | 1/4 | 3 | 3 | | 0.010 | 1-9/16 | 0.178 |
| N57911 | AN340-0.188-E2-R010.0-Z3 | 3/16 | 3/16 | 1/4 | 3 | 3 | TiCN | 0.010 | 1-9/16 | 0.178 |
| N57884 | AN340-0.250-E1-R010.0-Z3 | 1/4 | 1/4 | 5/16 | 2-1/2 | 3 | | 0.010 | 3/4 | 0.240 |
| N57913 | AN340-0.250-E1-R010.0-Z3 | 1/4 | 1/4 | 5/16 | 2-1/2 | 3 | TiCN | 0.010 | 3/4 | 0.240 |
| N57885 | AN340-0.250-E2-R010.0-Z3 | 1/4 | 1/4 | 5/16 | 3-1/4 | 3 | | 0.010 | 1-3/4 | 0.240 |
| N57914 | AN340-0.250-E2-R010.0-Z3 | 1/4 | 1/4 | 5/16 | 3-1/4 | 3 | TiCN | 0.010 | 1-3/4 | 0.240 |
| N57888 | AN340-0.375-E1-R015.0-Z3 | 3/8 | 3/8 | 1/2 | 2-1/2 | 3 | | 0.015 | 7/8 | 0.360 |
| N57917 | AN340-0.375-E1-R015.0-Z3 | 3/8 | 3/8 | 1/2 | 2-1/2 | 3 | TiCN | 0.015 | 7/8 | 0.360 |
| N57889 | AN340-0.375-E2-R015.0-Z3 | 3/8 | 3/8 | 1/2 | 3 | 3 | | 0.015 | 1-3/8 | 0.360 |
| N57918 | AN340-0.375-E2-R015.0-Z3 | 3/8 | 3/8 | 1/2 | 3 | 3 | TiCN | 0.015 | 1-3/8 | 0.360 |
| N57890 | AN340-0.375-E3-R015.0-Z3 | 3/8 | 3/8 | 1/2 | 4 | 3 | | 0.015 | 2-3/8 | 0.360 |
| N57919 | AN340-0.375-E3-R015.0-Z3 | 3/8 | 3/8 | 1/2 | 4 | 3 | TiCN | 0.015 | 2-3/8 | 0.360 |
| N57893 | AN340-0.500-E1-R020.0-Z3 | 1/2 | 1/2 | 5/8 | 3 | 3 | | 0.020 | 1-1/8 | 0.480 |
| N57922 | AN340-0.500-E1-R020.0-Z3 | 1/2 | 1/2 | 5/8 | 3 | 3 | TiCN | 0.020 | 1-1/8 | 0.480 |
| N57894 | AN340-0.500-E2-R020.0-Z3 | 1/2 | 1/2 | 5/8 | 4 | 3 | | 0.020 | 2-1/8 | 0.480 |
| N57923 | AN340-0.500-E2-R020.0-Z3 | 1/2 | 1/2 | 5/8 | 4 | 3 | TiCN | 0.020 | 2-1/8 | 0.480 |
| N57895 | AN340-0.500-E3-R020.0-Z3 | 1/2 | 1/2 | 5/8 | 5 | 3 | | 0.020 | 3-1/8 | 0.480 |
| N57924 | AN340-0.500-E3-R020.0-Z3 | 1/2 | 1/2 | 5/8 | 5 | 3 | TiCN | 0.020 | 3-1/8 | 0.480 |
| N57897 | AN340-0.625-E1-R025.0-Z3 | 5/8 | 5/8 | 3/4 | 3-1/2 | 3 | | 0.025 | 1-1/2 | 0.600 |
| N57926 | AN340-0.625-E1-R025.0-Z3 | 5/8 | 5/8 | 3/4 | 3-1/2 | 3 | TiCN | 0.025 | 1-1/2 | 0.600 |
| N57901 | AN340-0.750-E1-R030.0-Z3 | 3/4 | 3/4 | 1 | 4 | 3 | | 0.030 | 1-7/8 | 0.720 |
| N57930 | AN340-0.750-E1-R030.0-Z3 | 3/4 | 3/4 | 1 | 4 | 3 | TiCN | 0.030 | 1-7/8 | 0.720 |
| N57902 | AN340-0.750-E2-R030.0-Z3 | 3/4 | 3/4 | 1 | 5 | 3 | | 0.030 | 2-7/8 | 0.720 |
| N57931 | AN340-0.750-E2-R030.0-Z3 | 3/4 | 3/4 | 1 | 5 | 3 | TiCN | 0.030 | 2-7/8 | 0.720 |
| N57903 | AN340-0.750-E3-R030.0-Z3 | 3/4 | 3/4 | 1 | 6 | 3 | | 0.030 | 3-7/8 | 0.720 |
| N57932 | AN340-0.750-E3-R030.0-Z3 | 3/4 | 3/4 | 1 | 6 | 3 | TiCN | 0.030 | 3-7/8 | 0.720 |
| N57906 | AN340-1.000-E1-R040.0-Z3 | 1 | 1 | 1-1/4 | 4 | 3 | | 0.040 | 1-5/8 | 0.960 |
| N57935 | AN340-1.000-E1-R040.0-Z3 | 1 | 1 | 1-1/4 | 4 | 3 | TiCN | 0.040 | 1-5/8 | 0.960 |

# ELITE HIGH PERFORMANCE- A345

SOLID CARBIDE

HELIX 45°

SQUARE END

CENTER CUTTING

- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for peripheral milling in aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N61534 | A345-0.125-D2-S.0-Z3 | 1/8 | 1/8 | 1/4 | 1-1/2 | 3 | |
| N61626 | A345-0.125-D2-S.0-Z3 | 1/8 | 1/8 | 1/4 | 1-1/2 | 3 | TiCN |
| N61535 | A345-0.125-D3-S.0-Z3 | 1/8 | 1/8 | 3/8 | 1-1/2 | 3 | |
| N61627 | A345-0.125-D3-S.0-Z3 | 1/8 | 1/8 | 3/8 | 1-1/2 | 3 | TiCN |
| N61536 | A345-0.156-F2-S.0-Z3 | 5/32 | 3/16 | 5/16 | 2 | 3 | |
| N61628 | A345-0.156-F2-S.0-Z3 | 5/32 | 3/16 | 5/16 | 2 | 3 | TiCN |
| N61537 | A345-0.156-F3-S.0-Z3 | 5/32 | 3/16 | 1/2 | 2 | 3 | |
| N61629 | A345-0.156-F3-S.0-Z3 | 5/32 | 3/16 | 1/2 | 2 | 3 | TiCN |
| N61538 | A345-0.188-D2-S.0-Z3 | 3/16 | 3/16 | 5/16 | 2 | 3 | |
| N61630 | A345-0.188-D2-S.0-Z3 | 3/16 | 3/16 | 5/16 | 2 | 3 | TiCN |
| N61539 | A345-0.188-D3-S.0-Z3 | 3/16 | 3/16 | 9/16 | 2 | 3 | |
| N61631 | A345-0.188-D3-S.0-Z3 | 3/16 | 3/16 | 9/16 | 2 | 3 | TiCN |
| N61541 | A345-0.219-F3-S.0-Z3 | 7/32 | 1/4 | 3/4 | 2-1/2 | 3 | |
| N61633 | A345-0.219-F3-S.0-Z3 | 7/32 | 1/4 | 3/4 | 2-1/2 | 3 | TiCN |
| N61542 | A345-0.250-D2-S.0-Z3 | 1/4 | 1/4 | 3/8 | 2-1/2 | 3 | |
| N61634 | A345-0.250-D2-S.0-Z3 | 1/4 | 1/4 | 3/8 | 2-1/2 | 3 | TiCN |
| N61543 | A345-0.250-D3-S.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | |
| N61635 | A345-0.250-D3-S.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | TiCN |
| N61544 | A345-0.250-D5-S.0-Z3 | 1/4 | 1/4 | 1-1/4 | 4 | 3 | |
| N61636 | A345-0.250-D5-S.0-Z3 | 1/4 | 1/4 | 1-1/4 | 4 | 3 | TiCN |
| N61547 | A345-0.313-D1-S.0-Z3 | 5/16 | 5/16 | 7/16 | 2-1/2 | 3 | |
| N61639 | A345-0.313-D1-S.0-Z3 | 5/16 | 5/16 | 7/16 | 2-1/2 | 3 | TiCN |
| N61548 | A345-0.313-D3-S.0-Z3 | 5/16 | 5/16 | 13/16 | 2-1/2 | 3 | |
| N61640 | A345-0.313-D3-S.0-Z3 | 5/16 | 5/16 | 13/16 | 2-1/2 | 3 | TiCN |
| N61549 | A345-0.313-D4-S.0-Z3 | 5/16 | 5/16 | 1-1/4 | 3-1/2 | 3 | |
| N61641 | A345-0.313-D4-S.0-Z3 | 5/16 | 5/16 | 1-1/4 | 3-1/2 | 3 | TiCN |
| N61550 | A345-0.313-D7-S.0-Z3 | 5/16 | 5/16 | 2-1/4 | 4 | 3 | |
| N61642 | A345-0.313-D7-S.0-Z3 | 5/16 | 5/16 | 2-1/4 | 4 | 3 | TiCN |
| N61553 | A345-0.375-D1-S.0-Z3 | 3/8 | 3/8 | 1/2 | 2-1/2 | 3 | |
| N61645 | A345-0.375-D1-S.0-Z3 | 3/8 | 3/8 | 1/2 | 2-1/2 | 3 | TiCN |
| N61554 | A345-0.375-D3-S.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | |
| N61646 | A345-0.375-D3-S.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | TiCN |
| N61555 | A345-0.375-D4-S.0-Z3 | 3/8 | 3/8 | 1-1/2 | 4 | 3 | |
| N61647 | A345-0.375-D4-S.0-Z3 | 3/8 | 3/8 | 1-1/2 | 4 | 3 | TiCN |
| N61559 | A345-0.438-D2-S.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | |
| N61651 | A345-0.438-D2-S.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | TiCN |

**DISCOUNT CODE D43**

# ELITE HIGH PERFORMANCE- A345

SOLID CARBIDE

HELIX 45°

SQUARE END

CENTER CUTTING

- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for peripheral milling in aluminum and non-ferrous materials

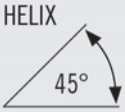
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N61562 | A345-0.500-D1-S.0-Z3 | 1/2 | 1/2 | 5/8 | 3 | 3 | |
| N61654 | A345-0.500-D1-S.0-Z3 | 1/2 | 1/2 | 5/8 | 3 | 3 | TiCN |
| N61563 | A345-0.500-D3-S.0-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | |
| N61655 | A345-0.500-D3-S.0-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | TiCN |
| N61564 | A345-0.500-D4-S.0-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | |
| N61656 | A345-0.500-D4-S.0-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiCN |
| N61565 | A345-0.500-D6-S.0-Z3 | 1/2 | 1/2 | 3-1/8 | 6 | 3 | |
| N61657 | A345-0.500-D6-S.0-Z3 | 1/2 | 1/2 | 3-1/8 | 6 | 3 | TiCN |
| N61566 | A345-0.625-D1-S.0-Z3 | 5/8 | 5/8 | 3/4 | 3 | 3 | |
| N61658 | A345-0.625-D1-S.0-Z3 | 5/8 | 5/8 | 3/4 | 3 | 3 | TiCN |
| N61567 | A345-0.625-D3-S.0-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | |
| N61659 | A345-0.625-D3-S.0-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | TiCN |
| N61568 | A345-0.625-D4-S.0-Z3 | 5/8 | 5/8 | 2-1/2 | 5 | 3 | |
| N61660 | A345-0.625-D4-S.0-Z3 | 5/8 | 5/8 | 2-1/2 | 5 | 3 | TiCN |
| N61569 | A345-0.625-D6-S.0-Z3 | 5/8 | 5/8 | 3-3/4 | 6 | 3 | |
| N61661 | A345-0.625-D6-S.0-Z3 | 5/8 | 5/8 | 3-3/4 | 6 | 3 | TiCN |
| N61570 | A345-0.750-D1-S.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | |
| N61662 | A345-0.750-D1-S.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | TiCN |
| N61571 | A345-0.750-D2-S.0-Z3 | 3/4 | 3/4 | 1-5/8 | 4 | 3 | |
| N61663 | A345-0.750-D2-S.0-Z3 | 3/4 | 3/4 | 1-5/8 | 4 | 3 | TiCN |
| N61572 | A345-0.750-D3-S.0-Z3 | 3/4 | 3/4 | 2-1/4 | 5 | 3 | |
| N61664 | A345-0.750-D3-S.0-Z3 | 3/4 | 3/4 | 2-1/4 | 5 | 3 | TiCN |
| N61573 | A345-0.750-D4-S.0-Z3 | 3/4 | 3/4 | 3-1/4 | 6 | 3 | |
| N61665 | A345-0.750-D4-S.0-Z3 | 3/4 | 3/4 | 3-1/4 | 6 | 3 | TiCN |
| N61574 | A345-0.750-D5-S.0-Z3 | 3/4 | 3/4 | 4 | 6-1/2 | 3 | |
| N61666 | A345-0.750-D5-S.0-Z3 | 3/4 | 3/4 | 4 | 6-1/2 | 3 | TiCN |
| N61575 | A345-1.000-D1-S.0-Z3 | 1 | 1 | 1-1/4 | 4 | 3 | |
| N61667 | A345-1.000-D1-S.0-Z3 | 1 | 1 | 1-1/4 | 4 | 3 | TiCN |
| N61576 | A345-1.000-D2-S.0-Z3 | 1 | 1 | 2 | 5 | 3 | |
| N61668 | A345-1.000-D2-S.0-Z3 | 1 | 1 | 2 | 5 | 3 | TiCN |
| N61577 | A345-1.000-D3-S.0-Z3 | 1 | 1 | 2-5/8 | 6 | 3 | |
| N61669 | A345-1.000-D3-S.0-Z3 | 1 | 1 | 2-5/8 | 6 | 3 | TiCN |
| N61578 | A345-1.000-D4-S.0-Z3 | 1 | 1 | 3-1/4 | 6 | 3 | |
| N61670 | A345-1.000-D4-S.0-Z3 | 1 | 1 | 3-1/4 | 6 | 3 | TiCN |
| N61579 | A345-1.000-D5-S.0-Z3 | 1 | 1 | 4-1/8 | 7 | 3 | |
| N61671 | A345-1.000-D5-S.0-Z3 | 1 | 1 | 4-1/8 | 7 | 3 | TiCN |

**DISCOUNT CODE D43**

# ELITE HIGH PERFORMANCE- A345R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for aluminum and non-ferrous materials

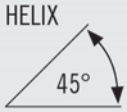
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N90753 | A345R-0.125-D3-R010.0-Z3 | 1/8 | 1/8 | 3/8 | 1-1/2 | 3 | TiCN | 0.010 |
| N90755 | A345R-0.125-D3-R020.0-Z3 | 1/8 | 1/8 | 3/8 | 1-1/2 | 3 | TiCN | 0.020 |
| N90756 | A345R-0.125-D3-R030.0-Z3 | 1/8 | 1/8 | 3/8 | 1-1/2 | 3 | TiCN | 0.030 |
| N90757 | A345R-0.156-F3-R010.0-Z3 | 5/32 | 3/16 | 1/2 | 2 | 3 | TiCN | 0.010 |
| N90759 | A345R-0.156-F3-R020.0-Z3 | 5/32 | 3/16 | 1/2 | 2 | 3 | TiCN | 0.020 |
| N90760 | A345R-0.156-F3-R030.0-Z3 | 5/32 | 3/16 | 1/2 | 2 | 3 | TiCN | 0.030 |
| N90761 | A345R-0.188-D3-R010.0-Z3 | 3/16 | 3/16 | 9/16 | 2 | 3 | TiCN | 0.010 |
| N90763 | A345R-0.188-D3-R020.0-Z3 | 3/16 | 3/16 | 9/16 | 2 | 3 | TiCN | 0.020 |
| N90764 | A345R-0.188-D3-R030.0-Z3 | 3/16 | 3/16 | 9/16 | 2 | 3 | TiCN | 0.030 |
| N90765 | A345R-0.219-F3-R010.0-Z3 | 7/32 | 1/4 | 3/4 | 2-1/2 | 3 | TiCN | 0.010 |
| N90767 | A345R-0.219-F3-R020.0-Z3 | 7/32 | 1/4 | 3/4 | 2-1/2 | 3 | TiCN | 0.020 |
| N90768 | A345R-0.219-F3-R030.0-Z3 | 7/32 | 1/4 | 3/4 | 2-1/2 | 3 | TiCN | 0.030 |
| N90769 | A345R-0.250-D3-R010.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | TiCN | 0.010 |
| N90775 | A345R-0.250-D3-R020.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | TiCN | 0.020 |
| N90776 | A345R-0.250-D3-R030.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | TiCN | 0.030 |
| N90777 | A345R-0.250-D3-R045.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | TiCN | 0.045 |
| N90778 | A345R-0.250-D3-R060.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | TiCN | 0.060 |
| N90785 | A345R-0.313-D3-R010.0-Z3 | 5/16 | 5/16 | 13/16 | 2-1/2 | 3 | TiCN | 0.010 |
| N90787 | A345R-0.313-D3-R020.0-Z3 | 5/16 | 5/16 | 13/16 | 2-1/2 | 3 | TiCN | 0.020 |
| N90788 | A345R-0.313-D3-R030.0-Z3 | 5/16 | 5/16 | 13/16 | 2-1/2 | 3 | TiCN | 0.030 |
| N90789 | A345R-0.313-D3-R045.0-Z3 | 5/16 | 5/16 | 13/16 | 2-1/2 | 3 | TiCN | 0.045 |
| N90790 | A345R-0.313-D3-R060.0-Z3 | 5/16 | 5/16 | 13/16 | 2-1/2 | 3 | TiCN | 0.060 |
| N90803 | A345R-0.375-D3-R010.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | TiCN | 0.010 |
| N90805 | A345R-0.375-D3-R020.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | TiCN | 0.020 |
| N90806 | A345R-0.375-D3-R030.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | TiCN | 0.030 |
| N90807 | A345R-0.375-D3-R045.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | TiCN | 0.045 |
| N90808 | A345R-0.375-D3-R060.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | TiCN | 0.060 |
| N90815 | A345R-0.438-D2-R010.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | TiCN | 0.010 |
| N90817 | A345R-0.438-D2-R020.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | TiCN | 0.020 |
| N90818 | A345R-0.438-D2-R030.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | TiCN | 0.030 |
| N90819 | A345R-0.438-D2-R045.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | TiCN | 0.045 |
| N90820 | A345R-0.438-D2-R060.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | TiCN | 0.060 |
| N90821 | A345R-0.438-D2-R090.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | TiCN | 0.090 |
| N90822 | A345R-0.438-D2-R125.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | TiCN | 0.125 |
| N90831 | A345R-0.500-D1-R010.0-Z3 | 1/2 | 1/2 | 5/8 | 3 | 3 | TiCN | 0.010 |

**DISCOUNT CODE D43**

# ELITE HIGH PERFORMANCE- A345R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for aluminum and non-ferrous materials

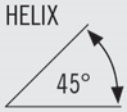
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N90833 | A345R-0.500-D1-R020.0-Z3 | 1/2 | 1/2 | 5/8 | 3 | 3 | TiCN | 0.020 |
| N90834 | A345R-0.500-D1-R030.0-Z3 | 1/2 | 1/2 | 5/8 | 3 | 3 | TiCN | 0.030 |
| N90835 | A345R-0.500-D1-R045.0-Z3 | 1/2 | 1/2 | 5/8 | 3 | 3 | TiCN | 0.045 |
| N90836 | A345R-0.500-D1-R060.0-Z3 | 1/2 | 1/2 | 5/8 | 3 | 3 | TiCN | 0.060 |
| N90837 | A345R-0.500-D1-R090.0-Z3 | 1/2 | 1/2 | 5/8 | 3 | 3 | TiCN | 0.090 |
| N90838 | A345R-0.500-D1-R125.0-Z3 | 1/2 | 1/2 | 5/8 | 3 | 3 | TiCN | 0.125 |
| N90839 | A345R-0.500-D3-R010.0-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | TiCN | 0.010 |
| N90841 | A345R-0.500-D3-R020.0-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | TiCN | 0.020 |
| N90842 | A345R-0.500-D3-R030.0-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | TiCN | 0.030 |
| N90843 | A345R-0.500-D3-R045.0-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | TiCN | 0.045 |
| N90844 | A345R-0.500-D3-R060.0-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | TiCN | 0.060 |
| N90847 | A345R-0.500-D3-R090.0-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | TiCN | 0.090 |
| N90848 | A345R-0.500-D3-R125.0-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | TiCN | 0.125 |
| N90849 | A345R-0.500-D4-R010.0-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiCN | 0.010 |
| N90851 | A345R-0.500-D4-R020.0-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiCN | 0.020 |
| N90852 | A345R-0.500-D4-R030.0-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiCN | 0.030 |
| N90853 | A345R-0.500-D4-R045.0-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiCN | 0.045 |
| N90854 | A345R-0.500-D4-R060.0-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiCN | 0.060 |
| N90855 | A345R-0.500-D4-R090.0-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiCN | 0.090 |
| N90856 | A345R-0.500-D4-R125.0-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiCN | 0.125 |
| N90865 | A345R-0.625-D3-R010.0-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | TiCN | 0.010 |
| N90867 | A345R-0.625-D3-R020.0-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | TiCN | 0.020 |
| N90868 | A345R-0.625-D3-R030.0-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | TiCN | 0.030 |
| N90869 | A345R-0.625-D3-R045.0-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | TiCN | 0.045 |
| N90870 | A345R-0.625-D3-R060.0-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | TiCN | 0.060 |
| N90871 | A345R-0.625-D3-R090.0-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | TiCN | 0.090 |
| N90872 | A345R-0.625-D3-R125.0-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | TiCN | 0.125 |
| N90881 | A345R-0.750-D1-R010.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | TiCN | 0.010 |
| N90883 | A345R-0.750-D1-R020.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | TiCN | 0.020 |
| N90884 | A345R-0.750-D1-R030.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | TiCN | 0.030 |
| N90885 | A345R-0.750-D1-R045.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | TiCN | 0.045 |
| N90886 | A345R-0.750-D1-R060.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | TiCN | 0.060 |
| N90887 | A345R-0.750-D1-R090.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | TiCN | 0.090 |
| N90888 | A345R-0.750-D1-R125.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | TiCN | 0.125 |
| N90889 | A345R-0.750-D1-R190.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | TiCN | 0.190 |

**DISCOUNT CODE D43**

# ELITE HIGH PERFORMANCE- A345R

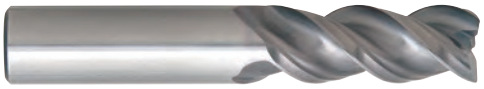
SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING



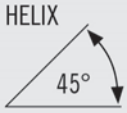
- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N90890 | A345R-0.750-D3-R010.0-Z3 | 3/4 | 3/4 | 2-1/4 | 5 | 3 | TiCN | 0.010 |
| N90892 | A345R-0.750-D3-R020.0-Z3 | 3/4 | 3/4 | 2-1/4 | 5 | 3 | TiCN | 0.020 |
| N90893 | A345R-0.750-D3-R030.0-Z3 | 3/4 | 3/4 | 2-1/4 | 5 | 3 | TiCN | 0.030 |
| N90894 | A345R-0.750-D3-R045.0-Z3 | 3/4 | 3/4 | 2-1/4 | 5 | 3 | TiCN | 0.045 |
| N90895 | A345R-0.750-D3-R060.0-Z3 | 3/4 | 3/4 | 2-1/4 | 5 | 3 | TiCN | 0.060 |
| N90896 | A345R-0.750-D3-R090.0-Z3 | 3/4 | 3/4 | 2-1/4 | 5 | 3 | TiCN | 0.090 |
| N90897 | A345R-0.750-D3-R125.0-Z3 | 3/4 | 3/4 | 2-1/4 | 5 | 3 | TiCN | 0.125 |
| N90899 | A345R-0.750-D3-R190.0-Z3 | 3/4 | 3/4 | 2-1/4 | 5 | 3 | TiCN | 0.190 |
| N90900 | A345R-0.750-D5-R010.0-Z3 | 3/4 | 3/4 | 4 | 6-1/2 | 3 | TiCN | 0.010 |
| N90902 | A345R-0.750-D5-R020.0-Z3 | 3/4 | 3/4 | 4 | 6-1/2 | 3 | TiCN | 0.020 |
| N90903 | A345R-0.750-D5-R030.0-Z3 | 3/4 | 3/4 | 4 | 6-1/2 | 3 | TiCN | 0.030 |
| N90904 | A345R-0.750-D5-R045.0-Z3 | 3/4 | 3/4 | 4 | 6-1/2 | 3 | TiCN | 0.045 |
| N90905 | A345R-0.750-D5-R060.0-Z3 | 3/4 | 3/4 | 4 | 6-1/2 | 3 | TiCN | 0.060 |
| N90906 | A345R-0.750-D5-R090.0-Z3 | 3/4 | 3/4 | 4 | 6-1/2 | 3 | TiCN | 0.090 |
| N90907 | A345R-0.750-D5-R125.0-Z3 | 3/4 | 3/4 | 4 | 6-1/2 | 3 | TiCN | 0.125 |
| N90534 | A345R-0.750-D5-R190.0-Z3 | 3/4 | 3/4 | 4 | 6-1/2 | 3 | TiCN | 0.190 |
| N90909 | A345R-1.000-D3-R010.0-Z3 | 1 | 1 | 2-5/8 | 6 | 3 | TiCN | 0.010 |
| N90911 | A345R-1.000-D3-R020.0-Z3 | 1 | 1 | 2-5/8 | 6 | 3 | TiCN | 0.020 |
| N90912 | A345R-1.000-D3-R030.0-Z3 | 1 | 1 | 2-5/8 | 6 | 3 | TiCN | 0.030 |
| N90913 | A345R-1.000-D3-R045.0-Z3 | 1 | 1 | 2-5/8 | 6 | 3 | TiCN | 0.045 |
| N90914 | A345R-1.000-D3-R060.0-Z3 | 1 | 1 | 2-5/8 | 6 | 3 | TiCN | 0.060 |
| N90915 | A345R-1.000-D3-R090.0-Z3 | 1 | 1 | 2-5/8 | 6 | 3 | TiCN | 0.090 |
| N90916 | A345R-1.000-D3-R125.0-Z3 | 1 | 1 | 2-5/8 | 6 | 3 | TiCN | 0.125 |
| N90917 | A345R-1.000-D3-R190.0-Z3 | 1 | 1 | 2-5/8 | 6 | 3 | TiCN | 0.190 |

# ELITE HIGH PERFORMANCE- AN345

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

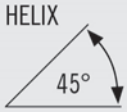
- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for slotting, pocketing and long reach peripheral milling in aluminum

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|
| N18597 | AN345-0.250-E2-S.0-Z3 | 1/4 | 1/4 | 3/8 | 4 | 3 | | 2-1/8 | 0.240 |
| N57938 | AN345-0.250-E3-S.0-Z3 | 1/4 | 1/4 | 1/2 | 3 | 3 | | 1 | 0.240 |
| N57939 | AN345-0.250-E4-S.0-Z3 | 1/4 | 1/4 | 1/2 | 4 | 3 | | 1-1/2 | 0.240 |
| N18598 | AN345-0.313-E1-S.0-Z3 | 5/16 | 5/16 | 7/16 | 4 | 3 | | 2-1/8 | 0.300 |
| N18599 | AN345-0.375-E1-S.0-Z3 | 3/8 | 3/8 | 3/8 | 2-1/2 | 3 | | 1-1/8 | 0.360 |
| N18600 | AN345-0.375-E2-S.0-Z3 | 3/8 | 3/8 | 1/2 | 4 | 3 | | 2-1/8 | 0.360 |
| N18601 | AN345-0.375-E3-S.0-Z3 | 3/8 | 3/8 | 1/2 | 6 | 3 | | 4-1/8 | 0.360 |
| N57940 | AN345-0.375-E4-S.0-Z3 | 3/8 | 3/8 | 3/4 | 4 | 3 | | 2 | 0.360 |
| N57941 | AN345-0.375-E5-S.0-Z3 | 3/8 | 3/8 | 3/4 | 5 | 3 | | 3 | 0.360 |
| N18603 | AN345-0.500-E2-S.0-Z3 | 1/2 | 1/2 | 5/8 | 4 | 3 | | 2-1/8 | 0.480 |
| N57942 | AN345-0.500-E4-S.0-Z3 | 1/2 | 1/2 | 5/8 | 5 | 3 | | 3 | 0.480 |
| N18604 | AN345-0.500-E3-S.0-Z3 | 1/2 | 1/2 | 5/8 | 6 | 3 | | 4-1/8 | 0.480 |
| N18606 | AN345-0.625-E2-S.0-Z3 | 5/8 | 5/8 | 3/4 | 6 | 3 | | 4 | 0.600 |
| N18609 | AN345-0.750-E3-S.0-Z3 | 3/4 | 3/4 | 1 | 6 | 3 | | 3-1/2 | 0.720 |
| N18610 | AN345-0.750-E4-S.0-Z3 | 3/4 | 3/4 | 1 | 7 | 3 | | 4-1/8 | 0.720 |
| N18612 | AN345-1.000-E2-S.0-Z3 | 1 | 1 | 1-1/4 | 6 | 3 | | 3-1/2 | 0.960 |

# ELITE HIGH PERFORMANCE- AN345R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief

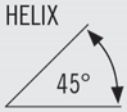
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|---|
| N90288 | AN345R-0.250-E2-R010.0-Z3 | 1/4 | 1/4 | 3/8 | 4 | 3 | TiCN | 0.010 | 2-1/8 | 0.240 |
| N90255 | AN345R-0.250-E2-R020.0-Z3 | 1/4 | 1/4 | 3/8 | 4 | 3 | TiCN | 0.020 | 2-1/8 | 0.240 |
| N90289 | AN345R-0.250-E2-R030.0-Z3 | 1/4 | 1/4 | 3/8 | 4 | 3 | TiCN | 0.030 | 2-1/8 | 0.240 |
| N90290 | AN345R-0.250-E2-R045.0-Z3 | 1/4 | 1/4 | 3/8 | 4 | 3 | TiCN | 0.045 | 2-1/8 | 0.240 |
| N90291 | AN345R-0.250-E2-R060.0-Z3 | 1/4 | 1/4 | 3/8 | 4 | 3 | TiCN | 0.060 | 2-1/8 | 0.240 |
| N90489 | AN345R-0.250-E3-R010.0-Z3 | 1/4 | 1/4 | 1/2 | 3 | 3 | TiCN | 0.010 | 1 | 0.240 |
| N90279 | AN345R-0.250-E3-R020.0-Z3 | 1/4 | 1/4 | 1/2 | 3 | 3 | TiCN | 0.020 | 1 | 0.240 |
| N90490 | AN345R-0.250-E3-R030.0-Z3 | 1/4 | 1/4 | 1/2 | 3 | 3 | TiCN | 0.030 | 1 | 0.240 |
| N90491 | AN345R-0.250-E3-R045.0-Z3 | 1/4 | 1/4 | 1/2 | 3 | 3 | TiCN | 0.045 | 1 | 0.240 |
| N90492 | AN345R-0.250-E3-R060.0-Z3 | 1/4 | 1/4 | 1/2 | 3 | 3 | TiCN | 0.060 | 1 | 0.240 |
| N90497 | AN345R-0.250-E4-R010.0-Z3 | 1/4 | 1/4 | 1/2 | 4 | 3 | TiCN | 0.010 | 1-1/2 | 0.240 |
| N90281 | AN345R-0.250-E4-R020.0-Z3 | 1/4 | 1/4 | 1/2 | 4 | 3 | TiCN | 0.020 | 1-1/2 | 0.240 |
| N90498 | AN345R-0.250-E4-R030.0-Z3 | 1/4 | 1/4 | 1/2 | 4 | 3 | TiCN | 0.030 | 1-1/2 | 0.240 |
| N90499 | AN345R-0.250-E4-R045.0-Z3 | 1/4 | 1/4 | 1/2 | 4 | 3 | TiCN | 0.045 | 1-1/2 | 0.240 |
| N90500 | AN345R-0.250-E4-R060.0-Z3 | 1/4 | 1/4 | 1/2 | 4 | 3 | TiCN | 0.060 | 1-1/2 | 0.240 |
| N90292 | AN345R-0.313-E1-R010.0-Z3 | 5/16 | 5/16 | 7/16 | 4 | 3 | TiCN | 0.010 | 2-1/8 | 0.300 |
| N90262 | AN345R-0.313-E1-R020.0-Z3 | 5/16 | 5/16 | 7/16 | 4 | 3 | TiCN | 0.020 | 2-1/8 | 0.300 |
| N90293 | AN345R-0.313-E1-R030.0-Z3 | 5/16 | 5/16 | 7/16 | 4 | 3 | TiCN | 0.030 | 2-1/8 | 0.300 |
| N90294 | AN345R-0.313-E1-R045.0-Z3 | 5/16 | 5/16 | 7/16 | 4 | 3 | TiCN | 0.045 | 2-1/8 | 0.300 |
| N90295 | AN345R-0.313-E1-R060.0-Z3 | 5/16 | 5/16 | 7/16 | 4 | 3 | TiCN | 0.060 | 2-1/8 | 0.300 |
| N90296 | AN345R-0.375-E1-R010.0-Z3 | 3/8 | 3/8 | 3/8 | 2-1/2 | 3 | TiCN | 0.010 | 1-1/8 | 0.360 |
| N90263 | AN345R-0.375-E1-R020.0-Z3 | 3/8 | 3/8 | 3/8 | 2-1/2 | 3 | TiCN | 0.020 | 1-1/8 | 0.360 |
| N90297 | AN345R-0.375-E1-R030.0-Z3 | 3/8 | 3/8 | 3/8 | 2-1/2 | 3 | TiCN | 0.030 | 1-1/8 | 0.360 |
| N90298 | AN345R-0.375-E1-R045.0-Z3 | 3/8 | 3/8 | 3/8 | 2-1/2 | 3 | TiCN | 0.045 | 1-1/8 | 0.360 |
| N90299 | AN345R-0.375-E1-R060.0-Z3 | 3/8 | 3/8 | 3/8 | 2-1/2 | 3 | TiCN | 0.060 | 1-1/8 | 0.360 |
| N90301 | AN345R-0.375-E2-R010.0-Z3 | 3/8 | 3/8 | 1/2 | 4 | 3 | TiCN | 0.010 | 2-1/8 | 0.360 |
| N90265 | AN345R-0.375-E2-R020.0-Z3 | 3/8 | 3/8 | 1/2 | 4 | 3 | TiCN | 0.020 | 2-1/8 | 0.360 |
| N90302 | AN345R-0.375-E2-R030.0-Z3 | 3/8 | 3/8 | 1/2 | 4 | 3 | TiCN | 0.030 | 2-1/8 | 0.360 |
| N90303 | AN345R-0.375-E2-R045.0-Z3 | 3/8 | 3/8 | 1/2 | 4 | 3 | TiCN | 0.045 | 2-1/8 | 0.360 |
| N90306 | AN345R-0.375-E2-R060.0-Z3 | 3/8 | 3/8 | 1/2 | 4 | 3 | TiCN | 0.060 | 2-1/8 | 0.360 |
| N90307 | AN345R-0.375-E3-R010.0-Z3 | 3/8 | 3/8 | 1/2 | 6 | 3 | TiCN | 0.010 | 4-1/8 | 0.360 |
| N90266 | AN345R-0.375-E3-R020.0-Z3 | 3/8 | 3/8 | 1/2 | 6 | 3 | TiCN | 0.020 | 4-1/8 | 0.360 |
| N90308 | AN345R-0.375-E3-R030.0-Z3 | 3/8 | 3/8 | 1/2 | 6 | 3 | TiCN | 0.030 | 4-1/8 | 0.360 |
| N90309 | AN345R-0.375-E3-R045.0-Z3 | 3/8 | 3/8 | 1/2 | 6 | 3 | TiCN | 0.045 | 4-1/8 | 0.360 |
| N90310 | AN345R-0.375-E3-R060.0-Z3 | 3/8 | 3/8 | 1/2 | 6 | 3 | TiCN | 0.060 | 4-1/8 | 0.360 |

**DISCOUNT CODE D43**

# ELITE HIGH PERFORMANCE- AN345R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief

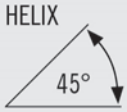
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|---|
| N90501 | AN345R-0.375-E4-R010.0-Z3 | 3/8 | 3/8 | 3/4 | 4 | 3 | TiCN | 0.010 | 2 | 0.360 |
| N90282 | AN345R-0.375-E4-R020.0-Z3 | 3/8 | 3/8 | 3/4 | 4 | 3 | TiCN | 0.020 | 2 | 0.360 |
| N90506 | AN345R-0.375-E4-R030.0-Z3 | 3/8 | 3/8 | 3/4 | 4 | 3 | TiCN | 0.030 | 2 | 0.360 |
| N90510 | AN345R-0.375-E4-R045.0-Z3 | 3/8 | 3/8 | 3/4 | 4 | 3 | TiCN | 0.045 | 2 | 0.360 |
| N90514 | AN345R-0.375-E4-R060.0-Z3 | 3/8 | 3/8 | 3/4 | 4 | 3 | TiCN | 0.060 | 2 | 0.360 |
| N90515 | AN345R-0.375-E5-R010.0-Z3 | 3/8 | 3/8 | 3/4 | 5 | 3 | TiCN | 0.010 | 3 | 0.360 |
| N90283 | AN345R-0.375-E5-R020.0-Z3 | 3/8 | 3/8 | 3/4 | 5 | 3 | TiCN | 0.020 | 3 | 0.360 |
| N90516 | AN345R-0.375-E5-R030.0-Z3 | 3/8 | 3/8 | 3/4 | 5 | 3 | TiCN | 0.030 | 3 | 0.360 |
| N90517 | AN345R-0.375-E5-R045.0-Z3 | 3/8 | 3/8 | 3/4 | 5 | 3 | TiCN | 0.045 | 3 | 0.360 |
| N90518 | AN345R-0.375-E5-R060.0-Z3 | 3/8 | 3/8 | 3/4 | 5 | 3 | TiCN | 0.060 | 3 | 0.360 |
| N90341 | AN345R-0.500-E2-R010.0-Z3 | 1/2 | 1/2 | 5/8 | 4 | 3 | TiCN | 0.010 | 2-1/8 | 0.480 |
| N90268 | AN345R-0.500-E2-R020.0-Z3 | 1/2 | 1/2 | 5/8 | 4 | 3 | TiCN | 0.020 | 2-1/8 | 0.480 |
| N90342 | AN345R-0.500-E2-R030.0-Z3 | 1/2 | 1/2 | 5/8 | 4 | 3 | TiCN | 0.030 | 2-1/8 | 0.480 |
| N90343 | AN345R-0.500-E2-R045.0-Z3 | 1/2 | 1/2 | 5/8 | 4 | 3 | TiCN | 0.045 | 2-1/8 | 0.480 |
| N90344 | AN345R-0.500-E2-R060.0-Z3 | 1/2 | 1/2 | 5/8 | 4 | 3 | TiCN | 0.060 | 2-1/8 | 0.480 |
| N90346 | AN345R-0.500-E2-R090.0-Z3 | 1/2 | 1/2 | 5/8 | 4 | 3 | TiCN | 0.090 | 2-1/8 | 0.480 |
| N90347 | AN345R-0.500-E2-R125.0-Z3 | 1/2 | 1/2 | 5/8 | 4 | 3 | TiCN | 0.125 | 2-1/8 | 0.480 |
| N90519 | AN345R-0.500-E3-R010.0-Z3 | 1/2 | 1/2 | 5/8 | 5 | 3 | TiCN | 0.010 | 3 | 0.480 |
| N90286 | AN345R-0.500-E3-R020.0-Z3 | 1/2 | 1/2 | 5/8 | 5 | 3 | TiCN | 0.020 | 3 | 0.480 |
| N90520 | AN345R-0.500-E3-R030.0-Z3 | 1/2 | 1/2 | 5/8 | 5 | 3 | TiCN | 0.030 | 3 | 0.480 |
| N90521 | AN345R-0.500-E3-R045.0-Z3 | 1/2 | 1/2 | 5/8 | 5 | 3 | TiCN | 0.045 | 3 | 0.480 |
| N90522 | AN345R-0.500-E3-R060.0-Z3 | 1/2 | 1/2 | 5/8 | 5 | 3 | TiCN | 0.060 | 3 | 0.480 |
| N90523 | AN345R-0.500-E3-R090.0-Z3 | 1/2 | 1/2 | 5/8 | 5 | 3 | TiCN | 0.090 | 3 | 0.480 |
| N90524 | AN345R-0.500-E3-R125.0-Z3 | 1/2 | 1/2 | 5/8 | 5 | 3 | TiCN | 0.125 | 3 | 0.480 |
| N90348 | AN345R-0.500-E4-R010.0-Z3 | 1/2 | 1/2 | 5/8 | 6 | 3 | TiCN | 0.010 | 4-1/8 | 0.480 |
| N90269 | AN345R-0.500-E4-R020.0-Z3 | 1/2 | 1/2 | 5/8 | 6 | 3 | TiCN | 0.020 | 4-1/8 | 0.480 |
| N90350 | AN345R-0.500-E4-R030.0-Z3 | 1/2 | 1/2 | 5/8 | 6 | 3 | TiCN | 0.030 | 4-1/8 | 0.480 |
| N90351 | AN345R-0.500-E4-R045.0-Z3 | 1/2 | 1/2 | 5/8 | 6 | 3 | TiCN | 0.045 | 4-1/8 | 0.480 |
| N90352 | AN345R-0.500-E4-R060.0-Z3 | 1/2 | 1/2 | 5/8 | 6 | 3 | TiCN | 0.060 | 4-1/8 | 0.480 |
| N90353 | AN345R-0.500-E4-R090.0-Z3 | 1/2 | 1/2 | 5/8 | 6 | 3 | TiCN | 0.090 | 4-1/8 | 0.480 |
| N90354 | AN345R-0.500-E4-R125.0-Z3 | 1/2 | 1/2 | 5/8 | 6 | 3 | TiCN | 0.125 | 4-1/8 | 0.480 |
| N90361 | AN345R-0.625-E2-R010.0-Z3 | 5/8 | 5/8 | 3/4 | 6 | 3 | TiCN | 0.010 | 4 | 0.600 |
| N90271 | AN345R-0.625-E2-R020.0-Z3 | 5/8 | 5/8 | 1/2 | 6 | 3 | TiCN | 0.020 | 4 | 0.600 |
| N90362 | AN345R-0.625-E2-R030.0-Z3 | 5/8 | 5/8 | 3/4 | 6 | 3 | TiCN | 0.030 | 4 | 0.600 |
| N90363 | AN345R-0.625-E2-R045.0-Z3 | 5/8 | 5/8 | 3/4 | 6 | 3 | TiCN | 0.045 | 4 | 0.600 |

DISCOUNT CODE D43

# ELITE HIGH PERFORMANCE- AN345R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

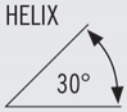
- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|---|
| N90364 | AN345R-0.625-E2-R060.0-Z3 | 5/8 | 5/8 | 3/4 | 6 | 3 | TiCN | 0.060 | 4 | 0.600 |
| N90365 | AN345R-0.625-E2-R090.0-Z3 | 5/8 | 5/8 | 3/4 | 6 | 3 | TiCN | 0.090 | 4 | 0.600 |
| N90366 | AN345R-0.625-E2-R125.0-Z3 | 5/8 | 5/8 | 3/4 | 6 | 3 | TiCN | 0.125 | 4 | 0.600 |
| N90380 | AN345R-0.750-E3-R010.0-Z3 | 3/4 | 3/4 | 1 | 6 | 3 | TiCN | 0.010 | 3-1/2 | 0.720 |
| N90274 | AN345R-0.750-E3-R020.0-Z3 | 3/4 | 3/4 | 1 | 6 | 3 | TiCN | 0.020 | 3-1/2 | 0.720 |
| N90382 | AN345R-0.750-E3-R030.0-Z3 | 3/4 | 3/4 | 1 | 6 | 3 | TiCN | 0.030 | 3-1/2 | 0.720 |
| N90383 | AN345R-0.750-E3-R045.0-Z3 | 3/4 | 3/4 | 1 | 6 | 3 | TiCN | 0.045 | 3-1/2 | 0.720 |
| N90384 | AN345R-0.750-E3-R060.0-Z3 | 3/4 | 3/4 | 1 | 6 | 3 | TiCN | 0.060 | 3-1/2 | 0.720 |
| N90385 | AN345R-0.750-E3-R090.0-Z3 | 3/4 | 3/4 | 1 | 6 | 3 | TiCN | 0.090 | 3-1/2 | 0.720 |
| N90386 | AN345R-0.750-E3-R125.0-Z3 | 3/4 | 3/4 | 1 | 6 | 3 | TiCN | 0.125 | 3-1/2 | 0.720 |
| N90399 | AN345R-1.000-E2-R010.0-Z3 | 1 | 1 | 1-1/4 | 6 | 3 | TiCN | 0.010 | 3-1/2 | 0.960 |
| N90277 | AN345R-1.000-E2-R020.0-Z3 | 1 | 1 | 1-1/4 | 6 | 3 | TiCN | 0.020 | 3-1/2 | 0.960 |
| N90401 | AN345R-1.000-E2-R030.0-Z3 | 1 | 1 | 1-1/4 | 6 | 3 | TiCN | 0.030 | 3-1/2 | 0.960 |
| N90402 | AN345R-1.000-E2-R045.0-Z3 | 1 | 1 | 1-1/4 | 6 | 3 | TiCN | 0.045 | 3-1/2 | 0.960 |
| N90403 | AN345R-1.000-E2-R060.0-Z3 | 1 | 1 | 1-1/4 | 6 | 3 | TiCN | 0.060 | 3-1/2 | 0.960 |
| N90404 | AN345R-1.000-E2-R090.0-Z3 | 1 | 1 | 1-1/4 | 6 | 3 | TiCN | 0.090 | 3-1/2 | 0.960 |
| N90441 | AN345R-1.000-E2-R125.0-Z3 | 1 | 1 | 1-1/4 | 6 | 3 | TiCN | 0.125 | 3-1/2 | 0.960 |

# ELITE HIGH PERFORMANCE- AR330

SOLID CARBIDE

HELIX




CHAMFER

CENTER CUTTING

COARSE PITCH

- Form ground flute shape
- Ideal for aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N76195 | AR330-0.250-D3-C020.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | | 0.020 |
| N76227 | AR330-0.250-D3-C020.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | TiCN | 0.020 |
| N76198 | AR330-0.375-D1-C020.0-Z3 | 3/8 | 3/8 | 1/2 | 2 | 3 | | 0.020 |
| N76230 | AR330-0.375-D1-C020.0-Z3 | 3/8 | 3/8 | 1/2 | 2 | 3 | TiCN | 0.020 |
| N76199 | AR330-0.375-D3-C020.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | | 0.020 |
| N76231 | AR330-0.375-D3-C020.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | TiCN | 0.020 |
| N76203 | AR330-0.500-D3-C025.0-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | | 0.025 |
| N76235 | AR330-0.500-D3-C025.0-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | TiCN | 0.025 |
| N76205 | AR330-0.625-D3-C025.0-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | | 0.025 |
| N76237 | AR330-0.625-D3-C025.0-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | TiCN | 0.025 |
| N76206 | AR330-0.750-D1-C025.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | | 0.025 |
| N76238 | AR330-0.750-D1-C025.0-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | TiCN | 0.025 |
| N76207 | AR330-0.750-D2-C025.0-Z3 | 3/4 | 3/4 | 1-5/8 | 4 | 3 | | 0.025 |
| N76239 | AR330-0.750-D2-C025.0-Z3 | 3/4 | 3/4 | 1-5/8 | 4 | 3 | TiCN | 0.025 |
| N76209 | AR330-1.000-D2-C025.0-Z3 | 1 | 1 | 2 | 5 | 3 | | 0.025 |
| N76241 | AR330-1.000-D2-C025.0-Z3 | 1 | 1 | 2 | 5 | 3 | TiCN | 0.025 |

# ELITE HIGH PERFORMANCE- A345M

SOLID CARBIDE

HELIX 45°

SQUARE END

CENTER CUTTING

- Cylindrical land to eliminate chatter
- Form ground flute shape
- Eccentric primary relief
- Ideal for aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N47811 | A345M-030-D4-S.0-Z3 | 3mm | 3mm | 12mm | 39mm | 3 | |
| N47812 | A345M-030-D4-S.0-Z3 | 3mm | 3mm | 12mm | 39mm | 3 | TiCN |
| N47815 | A345M-040-D3-S.0-Z3 | 4mm | 4mm | 12mm | 51mm | 3 | |
| N47816 | A345M-040-D3-S.0-Z3 | 4mm | 4mm | 12mm | 51mm | 3 | TiCN |
| N47817 | A345M-050-D3-S.0-Z3 | 5mm | 5mm | 14mm | 51mm | 3 | |
| N47818 | A345M-050-D3-S.0-Z3 | 5mm | 5mm | 14mm | 51mm | 3 | TiCN |
| N47821 | A345M-060-D3-S.0-Z3 | 6mm | 6mm | 16mm | 58mm | 3 | |
| N47822 | A345M-060-D3-S.0-Z3 | 6mm | 6mm | 16mm | 58mm | 3 | TiCN |
| N47825 | A345M-080-D2-S.0-Z3 | 8mm | 8mm | 20mm | 64mm | 3 | |
| N47826 | A345M-080-D2-S.0-Z3 | 8mm | 8mm | 20mm | 64mm | 3 | TiCN |
| N47829 | A345M-100-D2-S.0-Z3 | 10mm | 10mm | 22mm | 73mm | 3 | |
| N47830 | A345M-100-D2-S.0-Z3 | 10mm | 10mm | 22mm | 73mm | 3 | TiCN |
| N47833 | A345M-120-D3-S.0-Z3 | 12mm | 12mm | 32mm | 84mm | 3 | |
| N47834 | A345M-120-D3-S.0-Z3 | 12mm | 12mm | 32mm | 84mm | 3 | TiCN |
| N47837 | A345M-140-D2-S.0-Z3 | 14mm | 14mm | 32mm | 84mm | 3 | |
| N47838 | A345M-140-D2-S.0-Z3 | 14mm | 14mm | 32mm | 84mm | 3 | TiCN |
| N47841 | A345M-160-D2-S.0-Z3 | 16mm | 16mm | 36mm | 93mm | 3 | |
| N47842 | A345M-160-D2-S.0-Z3 | 16mm | 16mm | 36mm | 93mm | 3 | TiCN |
| N47849 | A345M-200-D3-S.0-Z3 | 20mm | 20mm | 50mm | 105mm | 3 | |
| N47850 | A345M-200-D3-S.0-Z3 | 20mm | 20mm | 50mm | 105mm | 3 | TiCN |
| N47853 | A345M-250-D3-S.0-Z3 | 25mm | 25mm | 60mm | 140mm | 3 | |
| N47854 | A345M-250-D3-S.0-Z3 | 25mm | 25mm | 60mm | 140mm | 3 | TiCN |

Niagara Cutter

**A245 / A245R / AB245**

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 2$ | | | | | | |
| | | | | | | | | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| N | E 16 | 1.0 | 1.00 | | 1000 | | n (rev/min) | 30560 | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 |
| | | | | | | | $f_z$ (in) | 0.0012 | 0.0024 | 0.0036 | 0.0048 | 0.0060 | 0.0072 | 0.0096 |
| | | | | 700 | - | 1300 | $v_f$ (in/min) | 73.3 | 73.3 | 73.3 | 73.3 | 73.3 | 73.3 | 73.3 |
| | E 17 | 1.0 | 1.00 | | 800 | | n (rev/min) | 24448 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |
| | | | | 500 | - | 1100 | $v_f$ (in/min) | 46.9 | 46.9 | 46.9 | 46.9 | 46.9 | 46.9 | 46.9 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | E 16 | 2.0 | 0.50 | | 1000 | | n (rev/min) | 30560 | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0030 | 0.0045 | 0.0060 | 0.0075 | 0.0090 | 0.0120 |
| | | | | 700 | - | 1300 | $v_f$ (in/min) | 91.7 | 91.7 | 91.7 | 91.7 | 91.7 | 91.7 | 91.7 |
| | E 17 | 1.5 | 0.50 | | 800 | | n (rev/min) | 24448 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 |
| | | | | | | | $f_z$ (in) | 0.0012 | 0.0024 | 0.0036 | 0.0048 | 0.0060 | 0.0072 | 0.0096 |
| | | | | 500 | - | 1100 | $v_f$ (in/min) | 58.7 | 58.7 | 58.7 | 58.7 | 58.7 | 58.7 | 58.7 |

**AN245 / ANB245**

| SLOTTING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 2$ | | | | | | |
| | | | | | | | | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| N | E 16 | 1.00 | 1.00 | | 800 | | n (rev/min) | 24448 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0019 | 0.0029 | 0.0039 | 0.0048 | 0.0058 | 0.0077 |
| | | | | 500 | - | 1100 | $v_f$ (in/min) | 47.1 | 47.1 | 47.1 | 47.1 | 47.1 | 47.1 | 47.1 |
| | E 17 | 1.00 | 1.00 | | 640 | | n (rev/min) | 19558 | 9779 | 6519 | 4890 | 3912 | 3260 | 2445 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0015 | 0.0023 | 0.0031 | 0.0038 | 0.0046 | 0.0061 |
| | | | | 340 | - | 940 | $v_f$ (in/min) | 29.8 | 29.8 | 29.8 | 29.8 | 29.8 | 29.8 | 29.8 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | E 16 | 2.00 | 0.50 | | 800 | | n (rev/min) | 24448 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 |
| | | | | | | | $f_z$ (in) | 0.0012 | 0.0024 | 0.0036 | 0.0048 | 0.0060 | 0.0072 | 0.0096 |
| | | | | 500 | - | 1100 | $v_f$ (in/min) | 58.7 | 58.7 | 58.7 | 58.7 | 58.7 | 58.7 | 58.7 |
| | E 17 | 1.50 | 0.50 | | 640 | | n (rev/min) | 19558 | 9779 | 6519 | 4890 | 3912 | 3260 | 2445 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0019 | 0.0029 | 0.0039 | 0.0048 | 0.0058 | 0.0077 |
| | | | | 340 | - | 940 | $v_f$ (in/min) | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

**AN340**

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 3$ | | | | | | |
| | | | | | | | | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| N | E 16 | 1.0 | 1.00 | | 1200 | | n (rev/min) | 36672 | 18336 | 12224 | 9168 | 7334 | 6112 | 4584 |
| | | | | | | | $f_z$ (in) | 0.0019 | 0.0038 | 0.0056 | 0.0075 | 0.0094 | 0.0113 | 0.0150 |
| | | | | 900 | - | 1500 | $v_f$ (in/min) | 206.3 | 206.3 | 206.3 | 206.3 | 206.3 | 206.3 | 206.3 |
| | E 17 | 1.0 | 1.00 | | 1000 | | n (rev/min) | 30560 | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 |
| | | | | | | | $f_z$ (in) | 0.0019 | 0.0038 | 0.0056 | 0.0075 | 0.0094 | 0.0113 | 0.0150 |
| | | | | 700 | - | 1300 | $v_f$ (in/min) | 171.9 | 171.9 | 171.9 | 171.9 | 171.9 | 171.9 | 171.9 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | E 16 | 1.0 | 0.25 | | 1200 | | n (rev/min) | 36672 | 18336 | 12224 | 9168 | 7334 | 6112 | 4584 |
| | | | | | | | $f_z$ (in) | 0.0028 | 0.0056 | 0.0084 | 0.0113 | 0.0141 | 0.0169 | 0.0225 |
| | | | | 900 | - | 1500 | $v_f$ (in/min) | 309.4 | 309.4 | 309.4 | 309.4 | 309.4 | 309.4 | 309.4 |
| | E 17 | 1.0 | 0.25 | | 1000 | | n (rev/min) | 30560 | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 |
| | | | | | | | $f_z$ (in) | 0.0028 | 0.0056 | 0.0084 | 0.0113 | 0.0141 | 0.0169 | 0.0225 |
| | | | | 700 | - | 1300 | $v_f$ (in/min) | 257.9 | 257.9 | 257.9 | 257.9 | 257.9 | 257.9 | 257.9 |

**A345 / A345R**

| SLOTTING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | ap x Dc | ae x Dc | vc (sf / min) | | | | Zn = 3 | | | | | | |
| | | | | | | | | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| N | E / M / A 16 | 0.5 | 1.00 | | 1000 | | n (rev/min) | 30560 | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 |
| | | | | | | | $f_z$ (in) | 0.0012 | 0.0024 | 0.0036 | 0.0048 | 0.0060 | 0.0072 | 0.0096 |
| | | | | 700 | - | 1300 | $v_f$ (in/min) | 110.0 | 110.0 | 110.0 | 110.0 | 110.0 | 110.0 | 110.0 |
| | E / M / A 17 | 0.5 | 1.00 | | 800 | | n (rev/min) | 24448 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |
| | | | | 500 | - | 1100 | $v_f$ (in/min) | 70.4 | 70.4 | 70.4 | 70.4 | 70.4 | 70.4 | 70.4 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | E / M / A 16 | 2.0 | 0.40 | | 1000 | | n (rev/min) | 30560 | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0030 | 0.0045 | 0.0060 | 0.0075 | 0.0090 | 0.0120 |
| | | | | 700 | - | 1300 | $v_f$ (in/min) | 137.5 | 137.5 | 137.5 | 137.5 | 137.5 | 137.5 | 137.5 |
| | E / M / A 17 | 1.5 | 0.40 | | 800 | | n (rev/min) | 24448 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 |
| | | | | | | | $f_z$ (in) | 0.0012 | 0.0024 | 0.0036 | 0.0048 | 0.0060 | 0.0072 | 0.0096 |
| | | | | 500 | - | 1100 | $v_f$ (in/min) | 88.0 | 88.0 | 88.0 | 88.0 | 88.0 | 88.0 | 88.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**AN345 / AN345R**

| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 3$ 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SLOTTING** | | | | | | | | | | | | | | |
| N | E 16 | 0.5 | 1.00 | 800 | | | n (rev/min) | 24448 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0019 | 0.0029 | 0.0039 | 0.0048 | 0.0058 | 0.0077 |
| | | | | 500 | - | 1100 | $v_f$ (in/min) | 70.6 | 70.6 | 70.6 | 70.6 | 70.6 | 70.6 | 70.6 |
| | E 17 | 0.5 | 1.00 | 640 | | | n (rev/min) | 19558 | 9779 | 6519 | 4890 | 3912 | 3260 | 2445 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0015 | 0.0023 | 0.0031 | 0.0038 | 0.0046 | 0.0061 |
| | | | | 340 | - | 940 | $v_f$ (in/min) | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 |
| **SIDE MILLING - ROUGHING** | | | | | | | | | | | | | | |
| N | E 16 | 2.0 | 0.40 | 800 | | | n (rev/min) | 24448 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 |
| | | | | | | | $f_z$ (in) | 0.0012 | 0.0024 | 0.0036 | 0.0048 | 0.0060 | 0.0072 | 0.0096 |
| | | | | 500 | - | 1100 | $v_f$ (in/min) | 88.0 | 88.0 | 88.0 | 88.0 | 88.0 | 88.0 | 88.0 |
| | E 17 | 1.5 | 0.40 | 640 | | | n (rev/min) | 19558 | 9779 | 6519 | 4890 | 3912 | 3260 | 2445 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0019 | 0.0029 | 0.0039 | 0.0048 | 0.0058 | 0.0077 |
| | | | | 340 | - | 940 | $v_f$ (in/min) | 56.5 | 56.5 | 56.5 | 56.5 | 56.5 | 56.5 | 56.5 |

**AR330**

| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 3$ 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SLOTTING** | | | | | | | | | | | | | | |
| N | E 16 | 1.00 | 1.00 | 800 | | | n (rev/min) | 24448 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0015 | 0.0023 | 0.0030 | 0.0038 | 0.0045 | 0.0060 |
| | | | | 500 | - | 1100 | $v_f$ (in/min) | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 |
| | E 17 | 1.00 | 1.00 | 800 | | | n (rev/min) | 24448 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0015 | 0.0023 | 0.0030 | 0.0038 | 0.0045 | 0.0060 |
| | | | | 500 | - | 1100 | $v_f$ (in/min) | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 |
| **SIDE MILLING - ROUGHING** | | | | | | | | | | | | | | |
| N | E 16 | 1.00 | 0.25 | 1100 | | | n (rev/min) | 33616 | 16808 | 11205 | 8404 | 6723 | 5603 | 4202 |
| | | | | | | | $f_z$ (in) | 0.0011 | 0.0021 | 0.0032 | 0.0042 | 0.0053 | 0.0063 | 0.0084 |
| | | | | 800 | - | 1400 | $v_f$ (in/min) | 105.9 | 105.9 | 105.9 | 105.9 | 105.9 | 105.9 | 105.9 |
| | E 17 | 1.00 | 0.25 | 1100 | | | n (rev/min) | 33616 | 16808 | 11205 | 8404 | 6723 | 5603 | 4202 |
| | | | | | | | $f_z$ (in) | 0.0011 | 0.0021 | 0.0032 | 0.0042 | 0.0053 | 0.0063 | 0.0084 |
| | | | | 800 | - | 1400 | $v_f$ (in/min) | 105.9 | 105.9 | 105.9 | 105.9 | 105.9 | 105.9 | 105.9 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

A345M

| SLOTTING | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min | | | | $Z_n = 3$ | | | | | | | | | |
| | | | | | | | | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 20 | 25 |
| N | E 16 | 0.5 | 1.00 | | 305 | | n (rev/min) | 32360 | 24270 | 16180 | 12140 | 9710 | 8090 | 6930 | 6070 | 4850 | 3880 |
| | | | | | | | $f_z$ (mm) | 0.029 | 0.038 | 0.058 | 0.077 | 0.096 | 0.115 | 0.134 | 0.154 | 0.192 | 0.240 |
| | | | | 213 | - | 396 | $v_f$ (mm/min) | 2796 | 2796 | 2796 | 2797 | 2796 | 2796 | 2794 | 2797 | 2794 | 2794 |
| | E 17 | 0.5 | 1.00 | | 244 | | n (rev/min) | 25890 | 19420 | 12940 | 9710 | 7770 | 6470 | 5550 | 4850 | 3880 | 3110 |
| | | | | | | | $f_z$ (mm) | 0.023 | 0.031 | 0.046 | 0.061 | 0.077 | 0.092 | 0.108 | 0.123 | 0.154 | 0.192 |
| | | | | 152 | - | 335 | $v_f$ (mm/min) | 1790 | 1790 | 1789 | 1790 | 1790 | 1789 | 1790 | 1788 | 1788 | 1791 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | E 16 | 2.0 | 0.40 | | 305 | | n (rev/min) | 32360 | 24270 | 16180 | 12140 | 9710 | 8090 | 6930 | 6070 | 4850 | 3880 |
| | | | | | | | $f_z$ (mm) | 0.036 | 0.048 | 0.072 | 0.096 | 0.120 | 0.144 | 0.168 | 0.192 | 0.240 | 0.300 |
| | | | | 213 | - | 396 | $v_f$ (mm/min) | 3495 | 3495 | 3495 | 3496 | 3496 | 3495 | 3493 | 3496 | 3492 | 3492 |
| | E 17 | 1.5 | 0.40 | | 244 | | n (rev/min) | 25890 | 19420 | 12940 | 9710 | 7770 | 6470 | 5550 | 4850 | 3880 | 3110 |
| | | | | | | | $f_z$ (mm) | 0.029 | 0.038 | 0.058 | 0.077 | 0.096 | 0.115 | 0.134 | 0.154 | 0.192 | 0.240 |
| | | | | 152 | - | 335 | $v_f$ (mm/min) | 2237 | 2237 | 2236 | 2237 | 2238 | 2236 | 2238 | 2235 | 2235 | 2239 |

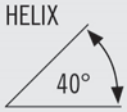
A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

# ELITE HIGH PERFORMANCE- NS240R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

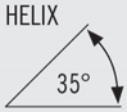
- High wear resistant AlTiN coating
- Rigid design to minimize tool deflection
- Designed for peripheral finish milling of aerospace parts requiring long axial engagement in materials such as titanium, stainless steels, and super alloys.

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N00291 | NS240R-0.250-D1-R010.0-Z2 | 1/4 | 1/4 | 1-1/4 | 3 | 2 | AlTiN | 0.010 |
| N00292 | NS240R-0.313-D1-R010.0-Z2 | 5/16 | 5/16 | 1-1/2 | 3-1/2 | 2 | AlTiN | 0.010 |
| N00293 | NS240R-0.375-D1-R010.0-Z2 | 3/8 | 3/8 | 1-7/8 | 4 | 2 | AlTiN | 0.010 |
| N00294 | NS240R-0.500-D1-R010.0-Z2 | 1/2 | 1/2 | 2-1/2 | 5 | 2 | AlTiN | 0.010 |
| N00295 | NS240R-0.625-D1-R015.0-Z2 | 5/8 | 5/8 | 3-1/8 | 6 | 2 | AlTiN | 0.015 |
| N00296 | NS240R-0.750-D1-R015.0-Z2 | 3/4 | 3/4 | 3-3/4 | 7 | 2 | AlTiN | 0.015 |
| N00297 | NS240R-0.750-D1-R120.0-Z2 | 3/4 | 3/4 | 3-3/4 | 7 | 2 | AlTiN | 0.120 |
| N00298 | NS240R-0.750-D1-R250.0-Z2 | 3/4 | 3/4 | 3-3/4 | 7 | 2 | AlTiN | 0.250 |
| N00299 | NS240R-1.000-D1-R015.0-Z2 | 1 | 1 | 5 | 8 | 2 | AlTiN | 0.015 |
| N00300 | NS240R-1.000-D1-R120.0-Z2 | 1 | 1 | 5 | 8 | 2 | AlTiN | 0.120 |
| N00301 | NS240R-1.000-D1-R250.0-Z2 | 1 | 1 | 5 | 8 | 2 | AlTiN | 0.250 |
| N00302 | NS240R-1.250-D1-R015.0-Z2 | 1-1/4 | 1-1/4 | 6-1/4 | 9-1/2 | 2 | AlTiN | 0.015 |
| N00303 | NS240R-1.250-D1-R120.0-Z2 | 1-1/4 | 1-1/4 | 6-1/4 | 9-1/2 | 2 | AlTiN | 0.120 |
| N00304 | NS240R-1.250-D1-R250.0-Z2 | 1-1/4 | 1-1/4 | 6-1/4 | 9-1/2 | 2 | AlTiN | 0.250 |

# ELITE HIGH PERFORMANCE- S335

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

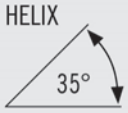
- Standard with radius
- Weldon flat standard on shank sizes 3/8" and larger
- Ideal for slotting in steel, stainless steel, titanium and high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N61802 | S335-0.125-D2-R010.0-Z3 | 1/8 | 1/8 | 1/4 | 1-1/2 | 3 | AlTiN | 0.010 |
| N61803 | S335-0.125-D4-R010.0-Z3 | 1/8 | 1/8 | 1/2 | 1-1/2 | 3 | AlTiN | 0.010 |
| N61804 | S335-0.156-F2-R010.0-Z3 | 5/32 | 3/16 | 5/16 | 2 | 3 | AlTiN | 0.010 |
| N61805 | S335-0.156-F4-R010.0-Z3 | 5/32 | 3/16 | 9/16 | 2 | 3 | AlTiN | 0.010 |
| N61806 | S335-0.188-D2-R010.0-Z3 | 3/16 | 3/16 | 5/16 | 2 | 3 | AlTiN | 0.010 |
| N61807 | S335-0.188-D3-R010.0-Z3 | 3/16 | 3/16 | 9/16 | 2 | 3 | AlTiN | 0.010 |
| N61808 | S335-0.219-F2-R020.0-Z3 | 7/32 | 1/4 | 3/8 | 2 | 3 | AlTiN | 0.020 |
| N61809 | S335-0.219-F3-R020.0-Z3 | 7/32 | 1/4 | 3/4 | 2-1/2 | 3 | AlTiN | 0.020 |
| N61810 | S335-0.250-D2-R020.0-Z3 | 1/4 | 1/4 | 3/8 | 2 | 3 | AlTiN | 0.020 |
| N61811 | S335-0.250-D3-R020.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | AlTiN | 0.020 |
| N61812 | S335-0.281-F2-R020.0-Z3 | 9/32 | 5/16 | 7/16 | 2 | 3 | AlTiN | 0.020 |
| N61813 | S335-0.281-F3-R020.0-Z3 | 9/32 | 5/16 | 13/16 | 2-1/2 | 3 | AlTiN | 0.020 |
| N61814 | S335-0.313-D1-R020.0-Z3 | 5/16 | 5/16 | 7/16 | 2 | 3 | AlTiN | 0.020 |
| N61815 | S335-0.313-D3-R020.0-Z3 | 5/16 | 5/16 | 13/16 | 2-1/2 | 3 | AlTiN | 0.020 |
| N61816 | S335-0.344-F1-R020.3-Z3 | 11/32 | 3/8 | 1/2 | 2 | 3 | AlTiN | 0.020 |
| N61817 | S335-0.344-F3-R020.3-Z3 | 11/32 | 3/8 | 1 | 2-1/2 | 3 | AlTiN | 0.020 |
| N61818 | S335-0.375-D1-R020.3-Z3 | 3/8 | 3/8 | 1/2 | 2 | 3 | AlTiN | 0.020 |
| N61819 | S335-0.375-D3-R020.3-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | AlTiN | 0.020 |
| N61820 | S335-0.438-D1-R020.3-Z3 | 7/16 | 7/16 | 9/16 | 2-1/2 | 3 | AlTiN | 0.020 |
| N61821 | S335-0.438-D2-R020.3-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | AlTiN | 0.020 |
| N61822 | S335-0.500-D1-R030.3-Z3 | 1/2 | 1/2 | 5/8 | 2-1/2 | 3 | AlTiN | 0.030 |
| N61823 | S335-0.500-D3-R030.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | AlTiN | 0.030 |
| N61824 | S335-0.625-D1-R030.3-Z3 | 5/8 | 5/8 | 3/4 | 3 | 3 | AlTiN | 0.030 |
| N61825 | S335-0.625-D3-R030.3-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | AlTiN | 0.030 |
| N61826 | S335-0.750-D1-R030.3-Z3 | 3/4 | 3/4 | 1 | 3 | 3 | AlTiN | 0.030 |
| N61827 | S335-0.750-D2-R030.3-Z3 | 3/4 | 3/4 | 1-5/8 | 4 | 3 | AlTiN | 0.030 |
| N61828 | S335-1.000-D1-R030.3-Z3 | 1 | 1 | 1-1/4 | 4 | 3 | AlTiN | 0.030 |
| N61829 | S335-1.000-D2-R030.3-Z3 | 1 | 1 | 2 | 5 | 3 | AlTiN | 0.030 |

# ELITE HIGH PERFORMANCE- SB335

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

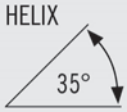
- Weldon flat standard on shank sizes 3/8" and larger
- Ideal for slotting in steel, stainless steel, titanium and high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N66218 | SB335-0.125-D2-B.0-Z3 | 1/8 | 1/8 | 1/4 | 1-1/2 | 3 | AlTiN |
| N66219 | SB335-0.125-D4-B.0-Z3 | 1/8 | 1/8 | 1/2 | 1-1/2 | 3 | AlTiN |
| N66220 | SB335-0.156-F2-B.0-Z3 | 5/32 | 3/16 | 5/16 | 2 | 3 | AlTiN |
| N66221 | SB335-0.156-F4-B.0-Z3 | 5/32 | 3/16 | 9/16 | 2 | 3 | AlTiN |
| N66222 | SB335-0.188-D2-B.0-Z3 | 3/16 | 3/16 | 5/16 | 2 | 3 | AlTiN |
| N66223 | SB335-0.188-D3-B.0-Z3 | 3/16 | 3/16 | 9/16 | 2 | 3 | AlTiN |
| N66224 | SB335-0.219-F2-B.0-Z3 | 7/32 | 1/4 | 3/8 | 2 | 3 | AlTiN |
| N66225 | SB335-0.219-F3-B.0-Z3 | 7/32 | 1/4 | 3/4 | 2-1/2 | 3 | AlTiN |
| N66226 | SB335-0.250-D2-B.0-Z3 | 1/4 | 1/4 | 3/8 | 2 | 3 | AlTiN |
| N66227 | SB335-0.250-D3-B.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | AlTiN |
| N66228 | SB335-0.281-F2-B.0-Z3 | 9/32 | 5/16 | 7/16 | 2 | 3 | AlTiN |
| N66229 | SB335-0.281-F3-B.0-Z3 | 9/32 | 5/16 | 13/16 | 2-1/2 | 3 | AlTiN |
| N66230 | SB335-0.313-D1-B.0-Z3 | 5/16 | 5/16 | 7/16 | 2 | 3 | AlTiN |
| N66231 | SB335-0.313-D3-B.0-Z3 | 5/16 | 5/16 | 13/16 | 2-1/2 | 3 | AlTiN |
| N66232 | SB335-0.344-F1-B.3-Z3 | 11/32 | 3/8 | 1/2 | 2 | 3 | AlTiN |
| N66233 | SB335-0.344-F3-B.3-Z3 | 11/32 | 3/8 | 1 | 2-1/2 | 3 | AlTiN |
| N66234 | SB335-0.375-D1-B.3-Z3 | 3/8 | 3/8 | 1/2 | 2 | 3 | AlTiN |
| N66235 | SB335-0.375-D3-B.3-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | AlTiN |
| N66236 | SB335-0.438-D1-B.3-Z3 | 7/16 | 7/16 | 9/16 | 2-1/2 | 3 | AlTiN |
| N66237 | SB335-0.438-D2-B.3-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | AlTiN |
| N66238 | SB335-0.500-D1-B.3-Z3 | 1/2 | 1/2 | 5/8 | 2-1/2 | 3 | AlTiN |
| N66239 | SB335-0.500-D3-B.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3 | 3 | AlTiN |
| N66241 | SB335-0.625-D3-B.3-Z3 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 3 | AlTiN |
| N66243 | SB335-0.750-D2-B.3-Z3 | 3/4 | 3/4 | 1-5/8 | 4 | 3 | AlTiN |
| N66245 | SB335-1.000-D2-B.3-Z3 | 1 | 1 | 2 | 5 | 3 | AlTiN |

# ELITE HIGH PERFORMANCE- SN335

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- Weldon flat standard on shank sizes 3/8" and larger
- Ideal for slotting, pocketing and long reach peripheral milling in steel, stainless steel, titanium and exotic alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|
| N18648 | SN335-0.250-E2-R020.0-Z3 | 1/4 | 1/4 | 3/8 | 4 | 3 | AlTiN | 0.020 | .240 |
| N18650 | SN335-0.375-E1-R020.3-Z3 | 3/8 | 3/8 | 1/2 | 4 | 3 | AlTiN | 0.020 | .360 |
| N18651 | SN335-0.375-E2-R020.3-Z3 | 3/8 | 3/8 | 1/2 | 6 | 3 | AlTiN | 0.020 | .360 |
| N18654 | SN335-0.500-E1-R030.3-Z3 | 1/2 | 1/2 | 5/8 | 4 | 3 | AlTiN | 0.030 | .480 |
| N18655 | SN335-0.500-E2-R030.3-Z3 | 1/2 | 1/2 | 5/8 | 5 | 3 | AlTiN | 0.030 | .480 |
| N18656 | SN335-0.500-E3-R030.3-Z3 | 1/2 | 1/2 | 5/8 | 6 | 3 | AlTiN | 0.030 | .480 |
| N18657 | SN335-0.625-E1-R030.3-Z3 | 5/8 | 5/8 | 3/4 | 4 | 3 | AlTiN | 0.030 | .600 |
| N18659 | SN335-0.625-E3-R030.3-Z3 | 5/8 | 5/8 | 3/4 | 6 | 3 | AlTiN | 0.030 | .600 |
| N18661 | SN335-0.750-E2-R030.3-Z3 | 3/4 | 3/4 | 1 | 5 | 3 | AlTiN | 0.030 | .720 |

# ELITE HIGH PERFORMANCE- S545

SOLID CARBIDE

HELIX 45°

SQUARE END

CENTER CUTTING

- Eccentric primary relief
- Ideal for peripheral finish milling in steel, stainless steel, titanium and high temperature alloys

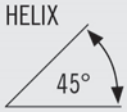
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N61830 | S545-0.125-D2-S.0-Z5 | 1/8 | 1/8 | 1/4 | 1-1/2 | 5 | |
| N61983 | S545-0.125-D2-S.0-Z5 | 1/8 | 1/8 | 1/4 | 1-1/2 | 5 | AlTiN |
| N61831 | S545-0.125-D4-S.0-Z5 | 1/8 | 1/8 | 1/2 | 1-1/2 | 5 | |
| N61984 | S545-0.125-D4-S.0-Z5 | 1/8 | 1/8 | 1/2 | 1-1/2 | 5 | AlTiN |
| N61832 | S545-0.156-F2-S.0-Z5 | 5/32 | 3/16 | 5/16 | 2 | 5 | |
| N61985 | S545-0.156-F2-S.0-Z5 | 5/32 | 3/16 | 5/16 | 2 | 5 | AlTiN |
| N61833 | S545-0.156-F4-S.0-Z5 | 5/32 | 3/16 | 9/16 | 2 | 5 | |
| N61986 | S545-0.156-F4-S.0-Z5 | 5/32 | 3/16 | 9/16 | 2 | 5 | AlTiN |
| N61834 | S545-0.188-D2-S.0-Z5 | 3/16 | 3/16 | 5/16 | 2 | 5 | |
| N61987 | S545-0.188-D2-S.0-Z5 | 3/16 | 3/16 | 5/16 | 2 | 5 | AlTiN |
| N61835 | S545-0.188-D3-S.0-Z5 | 3/16 | 3/16 | 9/16 | 2 | 5 | |
| N61988 | S545-0.188-D3-S.0-Z5 | 3/16 | 3/16 | 9/16 | 2 | 5 | AlTiN |
| N61836 | S545-0.219-F2-S.0-Z5 | 7/32 | 1/4 | 3/8 | 2 | 5 | |
| N61989 | S545-0.219-F2-S.0-Z5 | 7/32 | 1/4 | 3/8 | 2 | 5 | AlTiN |
| N61837 | S545-0.219-F3-S.0-Z5 | 7/32 | 1/4 | 3/4 | 2-1/2 | 5 | |
| N61990 | S545-0.219-F3-S.0-Z5 | 7/32 | 1/4 | 3/4 | 2-1/2 | 5 | AlTiN |
| N61838 | S545-0.250-D2-S.0-Z5 | 1/4 | 1/4 | 3/8 | 2 | 5 | |
| N61991 | S545-0.250-D2-S.0-Z5 | 1/4 | 1/4 | 3/8 | 2 | 5 | AlTiN |
| N61839 | S545-0.250-D3-S.0-Z5 | 1/4 | 1/4 | 3/4 | 2-1/2 | 5 | |
| N61992 | S545-0.250-D3-S.0-Z5 | 1/4 | 1/4 | 3/4 | 2-1/2 | 5 | AlTiN |
| N61840 | S545-0.250-D5-S.0-Z5 | 1/4 | 1/4 | 1-1/4 | 4 | 5 | |
| N61993 | S545-0.250-D5-S.0-Z5 | 1/4 | 1/4 | 1-1/4 | 4 | 5 | AlTiN |
| N61842 | S545-0.281-F3-S.0-Z5 | 9/32 | 5/16 | 13/16 | 2-1/2 | 5 | |
| N61995 | S545-0.281-F3-S.0-Z5 | 9/32 | 5/16 | 13/16 | 2-1/2 | 5 | AlTiN |
| N61843 | S545-0.313-D1-S.0-Z5 | 5/16 | 5/16 | 7/16 | 2 | 5 | |
| N61996 | S545-0.313-D1-S.0-Z5 | 5/16 | 5/16 | 7/16 | 2 | 5 | AlTiN |
| N61844 | S545-0.313-D3-S.0-Z5 | 5/16 | 5/16 | 13/16 | 2-1/2 | 5 | |
| N61997 | S545-0.313-D3-S.0-Z5 | 5/16 | 5/16 | 13/16 | 2-1/2 | 5 | AlTiN |
| N61845 | S545-0.313-D4-S.0-Z5 | 5/16 | 5/16 | 1-1/4 | 4 | 5 | |
| N61998 | S545-0.313-D4-S.0-Z5 | 5/16 | 5/16 | 1-1/4 | 4 | 5 | AlTiN |
| N61846 | S545-0.313-D7-S.0-Z5 | 5/16 | 5/16 | 2-1/8 | 4 | 5 | |
| N61999 | S545-0.313-D7-S.0-Z5 | 5/16 | 5/16 | 2-1/8 | 4 | 5 | AlTiN |
| N61849 | S545-0.375-D1-S.0-Z5 | 3/8 | 3/8 | 1/2 | 2 | 5 | |
| N62002 | S545-0.375-D1-S.0-Z5 | 3/8 | 3/8 | 1/2 | 2 | 5 | AlTiN |
| N61850 | S545-0.375-D3-S.0-Z5 | 3/8 | 3/8 | 1 | 2-1/2 | 5 | |

DISCOUNT CODE D43

# ELITE HIGH PERFORMANCE- S545

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- Eccentric primary relief
- Ideal for peripheral finish milling in steel, stainless steel, titanium and high temperature alloys

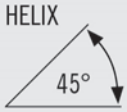
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N62003 | S545-0.375-D3-S.0-Z5 | 3/8 | 3/8 | 1 | 2-1/2 | 5 | AlTiN |
| N61851 | S545-0.375-D4-S.0-Z5 | 3/8 | 3/8 | 1-1/2 | 4 | 5 | |
| N62004 | S545-0.375-D4-S.0-Z5 | 3/8 | 3/8 | 1-1/2 | 4 | 5 | AlTiN |
| N61852 | S545-0.375-D7-S.0-Z5 | 3/8 | 3/8 | 2-1/2 | 6 | 5 | |
| N62005 | S545-0.375-D7-S.0-Z5 | 3/8 | 3/8 | 2-1/2 | 6 | 5 | AlTiN |
| N61855 | S545-0.438-D1-S.0-Z5 | 7/16 | 7/16 | 9/16 | 2-1/2 | 5 | |
| N62008 | S545-0.438-D1-S.0-Z5 | 7/16 | 7/16 | 9/16 | 2-1/2 | 5 | AlTiN |
| N61856 | S545-0.438-D2-S.0-Z5 | 7/16 | 7/16 | 1 | 2-3/4 | 5 | |
| N62009 | S545-0.438-D2-S.0-Z5 | 7/16 | 7/16 | 1 | 2-3/4 | 5 | AlTiN |
| N61857 | S545-0.438-D5-S.0-Z5 | 7/16 | 7/16 | 2 | 4 | 5 | |
| N62010 | S545-0.438-D5-S.0-Z5 | 7/16 | 7/16 | 2 | 4 | 5 | AlTiN |
| N61860 | S545-0.500-D1-S.0-Z5 | 1/2 | 1/2 | 5/8 | 2-1/2 | 5 | |
| N62013 | S545-0.500-D1-S.0-Z5 | 1/2 | 1/2 | 5/8 | 2-1/2 | 5 | AlTiN |
| N61861 | S545-0.500-D3-S.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | |
| N62014 | S545-0.500-D3-S.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlTiN |
| N61862 | S545-0.500-D4-S.0-Z5 | 1/2 | 1/2 | 2 | 4 | 5 | |
| N62015 | S545-0.500-D4-S.0-Z5 | 1/2 | 1/2 | 2 | 4 | 5 | AlTiN |
| N61863 | S545-0.500-D6-S.0-Z5 | 1/2 | 1/2 | 3-1/8 | 6 | 5 | |
| N62016 | S545-0.500-D6-S.0-Z5 | 1/2 | 1/2 | 3-1/8 | 6 | 5 | AlTiN |
| N55330 | S545-0.563-D3-S.0-Z5 | 9/16 | 9/16 | 1-1/2 | 3-1/2 | 5 | |
| N55333 | S545-0.563-D3-S.0-Z5 | 9/16 | 9/16 | 1-1/2 | 3-1/2 | 5 | AlTiN |
| N61864 | S545-0.625-D1-S.0-Z5 | 5/8 | 5/8 | 3/4 | 3 | 5 | |
| N62017 | S545-0.625-D1-S.0-Z5 | 5/8 | 5/8 | 3/4 | 3 | 5 | AlTiN |
| N61865 | S545-0.625-D3-S.0-Z5 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 5 | |
| N62018 | S545-0.625-D3-S.0-Z5 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 5 | AlTiN |
| N61866 | S545-0.625-D4-S.0-Z5 | 5/8 | 5/8 | 2-1/2 | 5 | 5 | |
| N62019 | S545-0.625-D4-S.0-Z5 | 5/8 | 5/8 | 2-1/2 | 5 | 5 | AlTiN |
| N61867 | S545-0.625-D6-S.0-Z5 | 5/8 | 5/8 | 4 | 6 | 5 | |
| N62020 | S545-0.625-D6-S.0-Z5 | 5/8 | 5/8 | 4 | 6 | 5 | AlTiN |
| N61868 | S545-0.750-D1-S.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | |
| N62021 | S545-0.750-D1-S.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | AlTiN |
| N61869 | S545-0.750-D2-S.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | |
| N62022 | S545-0.750-D2-S.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | AlTiN |
| N61870 | S545-0.750-D3-S.0-Z5 | 3/4 | 3/4 | 2-1/4 | 5 | 5 | |
| N62023 | S545-0.750-D3-S.0-Z5 | 3/4 | 3/4 | 2-1/4 | 5 | 5 | AlTiN |

DISCOUNT CODE D43

# ELITE HIGH PERFORMANCE- S545

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

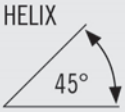
- Eccentric primary relief
- Ideal for peripheral finish milling in steel, stainless steel, titanium and high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N61871 | S545-0.750-D4-S.0-Z5 | 3/4 | 3/4 | 3-1/4 | 6 | 5 | |
| N62024 | S545-0.750-D4-S.0-Z5 | 3/4 | 3/4 | 3-1/4 | 6 | 5 | AlTiN |
| N61872 | S545-0.750-D5-S.0-Z5 | 3/4 | 3/4 | 4 | 6 | 5 | |
| N62025 | S545-0.750-D5-S.0-Z5 | 3/4 | 3/4 | 4 | 6 | 5 | AlTiN |
| N61873 | S545-1.000-D1-S.0-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | |
| N62026 | S545-1.000-D1-S.0-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | AlTiN |
| N61874 | S545-1.000-D2-S.0-Z5 | 1 | 1 | 2 | 4 | 5 | |
| N62027 | S545-1.000-D2-S.0-Z5 | 1 | 1 | 2 | 4 | 5 | AlTiN |
| N61875 | S545-1.000-D3-S.0-Z5 | 1 | 1 | 2-5/8 | 6 | 5 | |
| N62028 | S545-1.000-D3-S.0-Z5 | 1 | 1 | 2-5/8 | 6 | 5 | AlTiN |
| N61876 | S545-1.000-D4-S.0-Z5 | 1 | 1 | 3-1/4 | 6 | 5 | |
| N62029 | S545-1.000-D4-S.0-Z5 | 1 | 1 | 3-1/4 | 6 | 5 | AlTiN |
| N61877 | S545-1.000-D5-S.0-Z5 | 1 | 1 | 4-1/8 | 7 | 5 | |
| N62030 | S545-1.000-D5-S.0-Z5 | 1 | 1 | 4-1/8 | 7 | 5 | AlTiN |
| N61878 | S545-1.250-D2-S.0-Z7 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 7 | |
| N62031 | S545-1.250-D2-S.0-Z7 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 7 | AlTiN |
| N61879 | S545-1.250-D3-S.0-Z7 | 1-1/4 | 1-1/4 | 3-1/4 | 6 | 7 | |
| N62032 | S545-1.250-D3-S.0-Z7 | 1-1/4 | 1-1/4 | 3-1/4 | 6 | 7 | AlTiN |
| N61880 | S545-1.250-D4-S.0-Z7 | 1-1/4 | 1-1/4 | 5 | 7-1/2 | 7 | |
| N62033 | S545-1.250-D4-S.0-Z7 | 1-1/4 | 1-1/4 | 5 | 7-1/2 | 7 | AlTiN |

# ELITE HIGH PERFORMANCE- S545R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- Eccentric primary relief
- Ideal for peripheral finish milling in steel, stainless steel, titanium and high temperature alloys

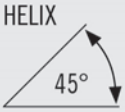
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N90927 | S545R-0.125-D2-R015.0-Z5 | 1/8 | 1/8 | 1/4 | 1-1/2 | 5 | AlTiN | 0.015 |
| N90928 | S545R-0.125-D2-R020.0-Z5 | 1/8 | 1/8 | 1/4 | 1-1/2 | 5 | AlTiN | 0.020 |
| N90929 | S545R-0.125-D4-R015.0-Z5 | 1/8 | 1/8 | 1/2 | 1-1/2 | 5 | AlTiN | 0.015 |
| N90930 | S545R-0.125-D4-R020.0-Z5 | 1/8 | 1/8 | 1/2 | 1-1/2 | 5 | AlTiN | 0.020 |
| N90931 | S545R-0.188-D2-R015.0-Z5 | 3/16 | 3/16 | 5/16 | 2 | 5 | AlTiN | 0.015 |
| N90932 | S545R-0.188-D2-R020.0-Z5 | 3/16 | 3/16 | 5/16 | 2 | 5 | AlTiN | 0.020 |
| N90908 | S545R-0.188-D3-R015.0-Z5 | 3/16 | 3/16 | 9/16 | 2 | 5 | AlTiN | 0.015 |
| N90933 | S545R-0.188-D3-R020.0-Z5 | 3/16 | 3/16 | 9/16 | 2 | 5 | AlTiN | 0.020 |
| N90935 | S545R-0.250-D2-R015.0-Z5 | 1/4 | 1/4 | 3/8 | 2 | 5 | AlTiN | 0.015 |
| N90936 | S545R-0.250-D2-R020.0-Z5 | 1/4 | 1/4 | 3/8 | 2 | 5 | AlTiN | 0.020 |
| N90937 | S545R-0.250-D2-R030.0-Z5 | 1/4 | 1/4 | 3/8 | 2 | 5 | AlTiN | 0.030 |
| N90938 | S545R-0.250-D2-R045.0-Z5 | 1/4 | 1/4 | 3/8 | 2 | 5 | AlTiN | 0.045 |
| N90926 | S545R-0.250-D3-R015.0-Z5 | 1/4 | 1/4 | 3/4 | 2-1/2 | 5 | AlTiN | 0.015 |
| N90940 | S545R-0.250-D3-R020.0-Z5 | 1/4 | 1/4 | 3/4 | 2-1/2 | 5 | AlTiN | 0.020 |
| N90934 | S545R-0.250-D3-R030.0-Z5 | 1/4 | 1/4 | 3/4 | 2-1/2 | 5 | AlTiN | 0.030 |
| N90941 | S545R-0.250-D3-R045.0-Z5 | 1/4 | 1/4 | 3/4 | 2-1/2 | 5 | AlTiN | 0.045 |
| N90943 | S545R-0.313-D1-R015.0-Z5 | 5/16 | 5/16 | 7/16 | 2 | 5 | AlTiN | 0.015 |
| N90945 | S545R-0.313-D1-R030.0-Z5 | 5/16 | 5/16 | 7/16 | 2 | 5 | AlTiN | 0.030 |
| N90944 | S545R-0.313-D1-R020.0-Z5 | 5/16 | 5/16 | 7/16 | 2 | 5 | AlTiN | 0.020 |
| N90946 | S545R-0.313-D1-R045.0-Z5 | 5/16 | 5/16 | 7/16 | 2 | 5 | AlTiN | 0.045 |
| N90947 | S545R-0.313-D3-R015.0-Z5 | 5/16 | 5/16 | 13/16 | 2-1/2 | 5 | AlTiN | 0.015 |
| N90948 | S545R-0.313-D3-R020.0-Z5 | 5/16 | 5/16 | 13/16 | 2-1/2 | 5 | AlTiN | 0.020 |
| N90939 | S545R-0.313-D3-R030.0-Z5 | 5/16 | 5/16 | 13/16 | 2-1/2 | 5 | AlTiN | 0.030 |
| N90949 | S545R-0.313-D3-R045.0-Z5 | 5/16 | 5/16 | 13/16 | 2-1/2 | 5 | AlTiN | 0.045 |
| N90950 | S545R-0.375-D1-R015.0-Z5 | 3/8 | 3/8 | 1/2 | 2 | 5 | AlTiN | 0.015 |
| N90952 | S545R-0.375-D1-R020.0-Z5 | 3/8 | 3/8 | 1/2 | 2 | 5 | AlTiN | 0.020 |
| N90953 | S545R-0.375-D1-R030.0-Z5 | 3/8 | 3/8 | 1/2 | 2 | 5 | AlTiN | 0.030 |
| N90954 | S545R-0.375-D1-R045.0-Z5 | 3/8 | 3/8 | 1/2 | 2 | 5 | AlTiN | 0.045 |
| N90955 | S545R-0.375-D1-R060.0-Z5 | 3/8 | 3/8 | 1/2 | 2 | 5 | AlTiN | 0.060 |
| N90956 | S545R-0.375-D3-R015.0-Z5 | 3/8 | 3/8 | 1 | 2-1/2 | 5 | AlTiN | 0.015 |
| N90957 | S545R-0.375-D3-R020.0-Z5 | 3/8 | 3/8 | 1 | 2-1/2 | 5 | AlTiN | 0.020 |
| N90958 | S545R-0.375-D3-R030.0-Z5 | 3/8 | 3/8 | 1 | 2-1/2 | 5 | AlTiN | 0.030 |
| N90942 | S545R-0.375-D3-R045.0-Z5 | 3/8 | 3/8 | 1 | 2-1/2 | 5 | AlTiN | 0.045 |
| N90960 | S545R-0.438-D1-R015.0-Z5 | 7/16 | 7/16 | 9/16 | 2-1/2 | 5 | AlTiN | 0.015 |
| N90961 | S545R-0.438-D1-R020.0-Z5 | 7/16 | 7/16 | 9/16 | 2-1/2 | 5 | AlTiN | 0.020 |
| N90962 | S545R-0.438-D1-R030.0-Z5 | 7/16 | 7/16 | 9/16 | 2-1/2 | 5 | AlTiN | 0.030 |

**DISCOUNT CODE D43**

# ELITE HIGH PERFORMANCE- S545R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- Eccentric primary relief
- Ideal for peripheral finish milling in steel, stainless steel, titanium and high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N90963 | S545R-0.438-D1-R045.0-Z5 | 7/16 | 7/16 | 9/16 | 2-1/2 | 5 | AlTiN | 0.045 |
| N90964 | S545R-0.438-D1-R060.0-Z5 | 7/16 | 7/16 | 9/16 | 2-1/2 | 5 | AlTiN | 0.060 |
| N90965 | S545R-0.438-D1-R090.0-Z5 | 7/16 | 7/16 | 9/16 | 2-1/2 | 5 | AlTiN | 0.090 |
| N90967 | S545R-0.438-D1-R125.0-Z5 | 7/16 | 7/16 | 9/16 | 2-1/2 | 5 | AlTiN | 0.125 |
| N90951 | S545R-0.438-D2-R015.0-Z5 | 7/16 | 7/16 | 1 | 2-3/4 | 5 | AlTiN | 0.015 |
| N90972 | S545R-0.438-D2-R020.0-Z5 | 7/16 | 7/16 | 1 | 2-3/4 | 5 | AlTiN | 0.020 |
| N90973 | S545R-0.438-D2-R030.0-Z5 | 7/16 | 7/16 | 1 | 2-3/4 | 5 | AlTiN | 0.030 |
| N90976 | S545R-0.438-D2-R045.0-Z5 | 7/16 | 7/16 | 1 | 2-3/4 | 5 | AlTiN | 0.045 |
| N90977 | S545R-0.438-D2-R060.0-Z5 | 7/16 | 7/16 | 1 | 2-3/4 | 5 | AlTiN | 0.060 |
| N90978 | S545R-0.438-D2-R090.0-Z5 | 7/16 | 7/16 | 1 | 2-3/4 | 5 | AlTiN | 0.090 |
| N90979 | S545R-0.438-D2-R125.0-Z5 | 7/16 | 7/16 | 1 | 2-3/4 | 5 | AlTiN | 0.125 |
| N90982 | S545R-0.500-D1-R015.0-Z5 | 1/2 | 1/2 | 5/8 | 2-1/2 | 5 | AlTiN | 0.015 |
| N90987 | S545R-0.500-D1-R020.0-Z5 | 1/2 | 1/2 | 5/8 | 2-1/2 | 5 | AlTiN | 0.020 |
| N91004 | S545R-0.500-D1-R030.0-Z5 | 1/2 | 1/2 | 5/8 | 2-1/2 | 5 | AlTiN | 0.030 |
| N91008 | S545R-0.500-D1-R045.0-Z5 | 1/2 | 1/2 | 5/8 | 2-1/2 | 5 | AlTiN | 0.045 |
| N91009 | S545R-0.500-D1-R060.0-Z5 | 1/2 | 1/2 | 5/8 | 2-1/2 | 5 | AlTiN | 0.060 |
| N91010 | S545R-0.500-D1-R090.0-Z5 | 1/2 | 1/2 | 5/8 | 2-1/2 | 5 | AlTiN | 0.090 |
| N91011 | S545R-0.500-D1-R125.0-Z5 | 1/2 | 1/2 | 5/8 | 2-1/2 | 5 | AlTiN | 0.125 |
| N90959 | S545R-0.500-D3-R015.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlTiN | 0.015 |
| N91012 | S545R-0.500-D3-R020.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlTiN | 0.020 |
| N91013 | S545R-0.500-D3-R030.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlTiN | 0.030 |
| N91015 | S545R-0.500-D3-R045.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlTiN | 0.045 |
| N91017 | S545R-0.500-D3-R060.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlTiN | 0.060 |
| N91019 | S545R-0.500-D3-R090.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlTiN | 0.090 |
| N91021 | S545R-0.500-D3-R125.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlTiN | 0.125 |
| N91042 | S545R-0.625-D1-R015.0-Z5 | 5/8 | 5/8 | 3/4 | 3 | 5 | AlTiN | 0.015 |
| N91051 | S545R-0.625-D1-R020.0-Z5 | 5/8 | 5/8 | 3/4 | 3 | 5 | AlTiN | 0.020 |
| N91060 | S545R-0.625-D1-R030.0-Z5 | 5/8 | 5/8 | 3/4 | 3 | 5 | AlTiN | 0.030 |
| N91075 | S545R-0.625-D1-R045.0-Z5 | 5/8 | 5/8 | 3/4 | 3 | 5 | AlTiN | 0.045 |
| N91076 | S545R-0.625-D1-R060.0-Z5 | 5/8 | 5/8 | 3/4 | 3 | 5 | AlTiN | 0.060 |
| N91077 | S545R-0.625-D1-R090.0-Z5 | 5/8 | 5/8 | 3/4 | 3 | 5 | AlTiN | 0.090 |
| N91078 | S545R-0.625-D1-R125.0-Z5 | 5/8 | 5/8 | 3/4 | 3 | 5 | AlTiN | 0.125 |
| N90980 | S545R-0.625-D3-R015.0-Z5 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 5 | AlTiN | 0.015 |
| N91079 | S545R-0.625-D3-R020.0-Z5 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 5 | AlTiN | 0.020 |
| N91084 | S545R-0.625-D3-R030.0-Z5 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 5 | AlTiN | 0.030 |
| N91086 | S545R-0.625-D3-R045.0-Z5 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 5 | AlTiN | 0.045 |

**DISCOUNT CODE D43**

# ELITE HIGH PERFORMANCE- S545R

SOLID CARBIDE

HELIX 45°

RADIUS

CENTER CUTTING

- Eccentric primary relief
- Ideal for peripheral finish milling in steel, stainless steel, titanium and high temperature alloys

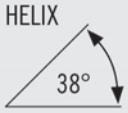
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N91090 | S545R-0.625-D3-R060.0-Z5 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 5 | AlTiN | 0.060 |
| N91091 | S545R-0.625-D3-R090.0-Z5 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 5 | AlTiN | 0.090 |
| N91093 | S545R-0.625-D3-R125.0-Z5 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 5 | AlTiN | 0.125 |
| N91095 | S545R-0.750-D1-R015.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | AlTiN | 0.015 |
| N91096 | S545R-0.750-D1-R020.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | AlTiN | 0.020 |
| N91097 | S545R-0.750-D1-R030.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | AlTiN | 0.030 |
| N91098 | S545R-0.750-D1-R045.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | AlTiN | 0.045 |
| N91099 | S545R-0.750-D1-R060.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | AlTiN | 0.060 |
| N91102 | S545R-0.750-D1-R090.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | AlTiN | 0.090 |
| N91103 | S545R-0.750-D1-R125.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | AlTiN | 0.125 |
| N91104 | S545R-0.750-D1-R190.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | AlTiN | 0.190 |
| N91039 | S545R-0.750-D2-R015.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | AlTiN | 0.015 |
| N91105 | S545R-0.750-D2-R020.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | AlTiN | 0.020 |
| N91107 | S545R-0.750-D2-R030.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | AlTiN | 0.030 |
| N91108 | S545R-0.750-D2-R045.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | AlTiN | 0.045 |
| N91110 | S545R-0.750-D2-R060.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | AlTiN | 0.060 |
| N91111 | S545R-0.750-D2-R090.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | AlTiN | 0.090 |
| N91116 | S545R-0.750-D2-R125.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | AlTiN | 0.125 |
| N91117 | S545R-0.750-D2-R190.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | AlTiN | 0.190 |
| N91133 | S545R-1.000-D1-R015.0-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | AlTiN | 0.015 |
| N91135 | S545R-1.000-D1-R020.0-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | AlTiN | 0.020 |
| N91136 | S545R-1.000-D1-R030.0-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | AlTiN | 0.030 |
| N91138 | S545R-1.000-D1-R045.0-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | AlTiN | 0.045 |
| N91139 | S545R-1.000-D1-R060.0-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | AlTiN | 0.060 |
| N91142 | S545R-1.000-D1-R090.0-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | AlTiN | 0.090 |
| N91143 | S545R-1.000-D1-R125.0-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | AlTiN | 0.125 |
| N91145 | S545R-1.000-D1-R190.0-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | AlTiN | 0.190 |
| N91094 | S545R-1.000-D2-R015.0-Z5 | 1 | 1 | 2 | 4 | 5 | AlTiN | 0.015 |
| N91146 | S545R-1.000-D2-R020.0-Z5 | 1 | 1 | 2 | 4 | 5 | AlTiN | 0.020 |
| N91148 | S545R-1.000-D2-R030.0-Z5 | 1 | 1 | 2 | 4 | 5 | AlTiN | 0.030 |
| N91149 | S545R-1.000-D2-R045.0-Z5 | 1 | 1 | 2 | 4 | 5 | AlTiN | 0.045 |
| N91152 | S545R-1.000-D2-R060.0-Z5 | 1 | 1 | 2 | 4 | 5 | AlTiN | 0.060 |
| N91155 | S545R-1.000-D2-R090.0-Z5 | 1 | 1 | 2 | 4 | 5 | AlTiN | 0.090 |
| N91158 | S545R-1.000-D2-R125.0-Z5 | 1 | 1 | 2 | 4 | 5 | AlTiN | 0.125 |
| N91163 | S545R-1.000-D2-R190.0-Z5 | 1 | 1 | 2 | 4 | 5 | AlTiN | 0.190 |

**DISCOUNT CODE D43**

# SOLID CARBIDE END MILLS- S738

SOLID CARBIDE

HELIX




CHAMFER

NON CENTER CUTTING

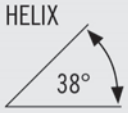
- Unequal indexing
- Designed for high speed milling, smoother cutting performance, improved workpiece surface finish and increased feed rates
- Designed for titanium and aerospace materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N58244 | S738-0.250-D2-C003.0-Z7 | 1/4 | 1/4 | 3/8 | 2 | 7 | AlTiN | 0.003 |
| N58247 | S738-0.250-D3-C003.0-Z7 | 1/4 | 1/4 | 3/4 | 2-1/2 | 7 | AlTiN | 0.003 |
| N58250 | S738-0.250-D5-C003.0-Z7 | 1/4 | 1/4 | 1-1/4 | 3 | 7 | AlTiN | 0.003 |
| N58253 | S738-0.375-D1-C005.0-Z7 | 3/8 | 3/8 | 1/2 | 2-1/2 | 7 | AlTiN | 0.005 |
| N58256 | S738-0.375-D3-C005.0-Z7 | 3/8 | 3/8 | 1 | 3 | 7 | AlTiN | 0.005 |
| N58259 | S738-0.375-D4-C005.0-Z7 | 3/8 | 3/8 | 1-1/2 | 3-1/2 | 7 | AlTiN | 0.005 |
| N58262 | S738-0.500-D2-C006.0-Z7 | 1/2 | 1/2 | 3/4 | 3 | 7 | AlTiN | 0.006 |
| N58266 | S738-0.500-D3-C006.0-Z7 | 1/2 | 1/2 | 1-1/4 | 3 | 7 | AlTiN | 0.006 |
| N58270 | S738-0.500-D4-C006.0-Z7 | 1/2 | 1/2 | 2 | 4 | 7 | AlTiN | 0.006 |

# SOLID CARBIDE END MILLS- S938

SOLID CARBIDE

HELIX




CHAMFER

NON CENTER CUTTING

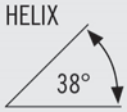
- Unequal Indexing
- Designed for high speed milling, smoother cutting performance, improved workpiece surface finish and increased feed rates
- Designed for titanium and aerospace materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N58274 | S938-0.625-D1-C008.0-Z9 | 5/8 | 5/8 | 3/4 | 3 | 9 | AlTiN | 0.008 |
| N58279 | S938-0.625-D3-C008.0-Z9 | 5/8 | 5/8 | 1-5/8 | 4 | 9 | AlTiN | 0.008 |
| N58284 | S938-0.625-D4-C008.0-Z9 | 5/8 | 5/8 | 2-1/2 | 5 | 9 | AlTiN | 0.008 |
| N58289 | S938-0.750-D2-C010.0-Z9 | 3/4 | 3/4 | 1-5/8 | 4 | 9 | AlTiN | 0.010 |
| N58294 | S938-0.750-D3-C010.0-Z9 | 3/4 | 3/4 | 2-1/4 | 5 | 9 | AlTiN | 0.010 |
| N58299 | S938-0.750-D4-C010.0-Z9 | 3/4 | 3/4 | 3-1/4 | 6 | 9 | AlTiN | 0.010 |
| N58304 | S938-1.000-D2-C012.0-Z9 | 1 | 1 | 2 | 5 | 9 | AlTiN | 0.012 |
| N58309 | S938-1.000-D3-C012.0-Z9 | 1 | 1 | 3-1/4 | 6 | 9 | AlTiN | 0.012 |
| N58314 | S938-1.000-D4-C012.0-Z9 | 1 | 1 | 4-1/8 | 7 | 9 | AlTiN | 0.012 |

# SOLID CARBIDE END MILLS- S738R

SOLID CARBIDE

HELIX




RADIUS

NON CENTER CUTTING

- Unequal indexing
- Standard with aerospace corner radii
- Designed for high speed milling, smoother cutting performance, improved workpiece surface finish and increased feed rates
- Designed for titanium and aerospace materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N58245 | S738R-0.250-D2-R015.0-Z7 | 1/4 | 1/4 | 3/8 | 2 | 7 | AlTiN | 0.015 |
| N58246 | S738R-0.250-D2-R030.0-Z7 | 1/4 | 1/4 | 3/8 | 2 | 7 | AlTiN | 0.030 |
| N58248 | S738R-0.250-D3-R015.0-Z7 | 1/4 | 1/4 | 3/4 | 2-1/2 | 7 | AlTiN | 0.015 |
| N58249 | S738R-0.250-D3-R030.0-Z7 | 1/4 | 1/4 | 3/4 | 2-1/2 | 7 | AlTiN | 0.030 |
| N58251 | S738R-0.250-D5-R015.0-Z7 | 1/4 | 1/4 | 1-1/4 | 3 | 7 | AlTiN | 0.015 |
| N58252 | S738R-0.250-D5-R030.0-Z7 | 1/4 | 1/4 | 1-1/4 | 3 | 7 | AlTiN | 0.030 |
| N58254 | S738R-0.375-D1-R015.0-Z7 | 3/8 | 3/8 | 1/2 | 2-1/2 | 7 | AlTiN | 0.015 |
| N58255 | S738R-0.375-D1-R030.0-Z7 | 3/8 | 3/8 | 1/2 | 2-1/2 | 7 | AlTiN | 0.030 |
| N58257 | S738R-0.375-D3-R015.0-Z7 | 3/8 | 3/8 | 1 | 3 | 7 | AlTiN | 0.015 |
| N58258 | S738R-0.375-D3-R030.0-Z7 | 3/8 | 3/8 | 1 | 3 | 7 | AlTiN | 0.030 |
| N58260 | S738R-0.375-D4-R015.0-Z7 | 3/8 | 3/8 | 1-1/2 | 3-1/2 | 7 | AlTiN | 0.015 |
| N58261 | S738R-0.375-D4-R030.0-Z7 | 3/8 | 3/8 | 1-1/2 | 3-1/2 | 7 | AlTiN | 0.030 |
| N58263 | S738R-0.500-D2-R015.0-Z7 | 1/2 | 1/2 | 3/4 | 3 | 7 | AlTiN | 0.015 |
| N58264 | S738R-0.500-D2-R030.0-Z7 | 1/2 | 1/2 | 3/4 | 3 | 7 | AlTiN | 0.030 |
| N58265 | S738R-0.500-D2-R060.0-Z7 | 1/2 | 1/2 | 3/4 | 3 | 7 | AlTiN | 0.060 |
| N58267 | S738R-0.500-D3-R015.0-Z7 | 1/2 | 1/2 | 1-1/4 | 3 | 7 | AlTiN | 0.015 |
| N58268 | S738R-0.500-D3-R030.0-Z7 | 1/2 | 1/2 | 1-1/4 | 3 | 7 | AlTiN | 0.030 |
| N58269 | S738R-0.500-D3-R060.0-Z7 | 1/2 | 1/2 | 1-1/4 | 3 | 7 | AlTiN | 0.060 |
| N58271 | S738R-0.500-D4-R015.0-Z7 | 1/2 | 1/2 | 2 | 4 | 7 | AlTiN | 0.015 |
| N58272 | S738R-0.500-D4-R030.0-Z7 | 1/2 | 1/2 | 2 | 4 | 7 | AlTiN | 0.030 |
| N58273 | S738R-0.500-D4-R060.0-Z7 | 1/2 | 1/2 | 2 | 4 | 7 | AlTiN | 0.060 |

# SOLID CARBIDE END MILLS- S938R

SOLID CARBIDE

HELIX 38°

RADIUS

NON CENTER CUTTING

- Unequal indexing
- Standard with aerospace corner radii
- Designed for high speed milling, smoother cutting performance, improved workpiece surface finish and increased feed rates
- Designed for titanium and aerospace materials

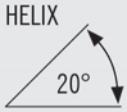
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N58275 | S938R-0.625-D1-R030.0-Z9 | 5/8 | 5/8 | 3/4 | 3 | 9 | AlTiN | 0.030 |
| N58276 | S938R-0.625-D1-R060.0-Z9 | 5/8 | 5/8 | 3/4 | 3 | 9 | AlTiN | 0.060 |
| N58277 | S938R-0.625-D1-R090.0-Z9 | 5/8 | 5/8 | 3/4 | 3 | 9 | AlTiN | 0.090 |
| N58278 | S938R-0.625-D1-R120.0-Z9 | 5/8 | 5/8 | 3/4 | 3 | 9 | AlTiN | 0.120 |
| N58280 | S938R-0.625-D3-R030.0-Z9 | 5/8 | 5/8 | 1-5/8 | 4 | 9 | AlTiN | 0.030 |
| N58281 | S938R-0.625-D3-R060.0-Z9 | 5/8 | 5/8 | 1-5/8 | 4 | 9 | AlTiN | 0.060 |
| N58282 | S938R-0.625-D3-R090.0-Z9 | 5/8 | 5/8 | 1-5/8 | 4 | 9 | AlTiN | 0.090 |
| N58283 | S938R-0.625-D3-R120.0-Z9 | 5/8 | 5/8 | 1-5/8 | 4 | 9 | AlTiN | 0.120 |
| N58285 | S938R-0.625-D4-R030.0-Z9 | 5/8 | 5/8 | 2-1/2 | 5 | 9 | AlTiN | 0.030 |
| N58286 | S938R-0.625-D4-R060.0-Z9 | 5/8 | 5/8 | 2-1/2 | 5 | 9 | AlTiN | 0.060 |
| N58287 | S938R-0.625-D4-R090.0-Z9 | 5/8 | 5/8 | 2-1/2 | 5 | 9 | AlTiN | 0.090 |
| N58288 | S938R-0.625-D4-R120.0-Z9 | 5/8 | 5/8 | 2-1/2 | 5 | 9 | AlTiN | 0.120 |
| N58290 | S938R-0.750-D2-R030.0-Z9 | 3/4 | 3/4 | 1-5/8 | 4 | 9 | AlTiN | 0.030 |
| N58291 | S938R-0.750-D2-R060.0-Z9 | 3/4 | 3/4 | 1-5/8 | 4 | 9 | AlTiN | 0.060 |
| N58292 | S938R-0.750-D2-R090.0-Z9 | 3/4 | 3/4 | 1-5/8 | 4 | 9 | AlTiN | 0.090 |
| N58293 | S938R-0.750-D2-R120.0-Z9 | 3/4 | 3/4 | 1-5/8 | 4 | 9 | AlTiN | 0.120 |
| N58295 | S938R-0.750-D3-R030.0-Z9 | 3/4 | 3/4 | 2-1/4 | 5 | 9 | AlTiN | 0.030 |
| N58296 | S938R-0.750-D3-R060.0-Z9 | 3/4 | 3/4 | 2-1/4 | 5 | 9 | AlTiN | 0.060 |
| N58297 | S938R-0.750-D3-R090.0-Z9 | 3/4 | 3/4 | 2-1/4 | 5 | 9 | AlTiN | 0.090 |
| N58298 | S938R-0.750-D3-R120.0-Z9 | 3/4 | 3/4 | 2-1/4 | 5 | 9 | AlTiN | 0.120 |
| N58300 | S938R-0.750-D4-R030.0-Z9 | 3/4 | 3/4 | 3-1/4 | 6 | 9 | AlTiN | 0.030 |
| N58301 | S938R-0.750-D4-R060.0-Z9 | 3/4 | 3/4 | 3-1/4 | 6 | 9 | AlTiN | 0.060 |
| N58302 | S938R-0.750-D4-R090.0-Z9 | 3/4 | 3/4 | 3-1/4 | 6 | 9 | AlTiN | 0.090 |
| N58303 | S938R-0.750-D4-R120.0-Z9 | 3/4 | 3/4 | 3-1/4 | 6 | 9 | AlTiN | 0.120 |
| N58305 | S938R-1.000-D2-R030.0-Z9 | 1 | 1 | 2 | 5 | 9 | AlTiN | 0.030 |
| N58306 | S938R-1.000-D2-R060.0-Z9 | 1 | 1 | 2 | 5 | 9 | AlTiN | 0.060 |
| N58307 | S938R-1.000-D2-R090.0-Z9 | 1 | 1 | 2 | 5 | 9 | AlTiN | 0.090 |
| N58308 | S938R-1.000-D2-R120.0-Z9 | 1 | 1 | 2 | 5 | 9 | AlTiN | 0.120 |
| N58310 | S938R-1.000-D3-R030.0-Z9 | 1 | 1 | 3-1/4 | 6 | 9 | AlTiN | 0.030 |
| N58311 | S938R-1.000-D3-R060.0-Z9 | 1 | 1 | 3-1/4 | 6 | 9 | AlTiN | 0.060 |
| N58312 | S938R-1.000-D3-R090.0-Z9 | 1 | 1 | 3-1/4 | 6 | 9 | AlTiN | 0.090 |
| N58313 | S938R-1.000-D3-R120.0-Z9 | 1 | 1 | 3-1/4 | 6 | 9 | AlTiN | 0.120 |
| N58315 | S938R-1.000-D4-R030.0-Z9 | 1 | 1 | 4-1/8 | 7 | 9 | AlTiN | 0.030 |
| N58316 | S938R-1.000-D4-R060.0-Z9 | 1 | 1 | 4-1/8 | 7 | 9 | AlTiN | 0.060 |
| N58317 | S938R-1.000-D4-R090.0-Z9 | 1 | 1 | 4-1/8 | 7 | 9 | AlTiN | 0.090 |
| N58318 | S938R-1.000-D4-R120.0-Z9 | 1 | 1 | 4-1/8 | 7 | 9 | AlTiN | 0.120 |

**DISCOUNT CODE D43**

# ELITE HIGH PERFORMANCE- SR420

SOLID CARBIDE

HELIX




CHAMFER

CENTER CUTTING

FINE PITCH

- Fine-pitch knuckle form
- Weldon flat standard on shank sizes 3/8" and larger
- Designed for steel and stainless steel

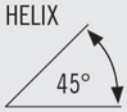
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N76130 | SR420-0.250-D2-C020.0-Z4 | 1/4 | 1/4 | 3/8 | 2 | 4 | | 0.020 |
| N76178 | SR420-0.250-D2-C020.0-Z4 | 1/4 | 1/4 | 3/8 | 2 | 4 | AlTiN | 0.020 |
| N76131 | SR420-0.250-D3-C020.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | | 0.020 |
| N76179 | SR420-0.250-D3-C020.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | AlTiN | 0.020 |
| N76132 | SR420-0.313-D1-C020.0-Z4 | 5/16 | 5/16 | 7/16 | 2 | 4 | | 0.020 |
| N76180 | SR420-0.313-D1-C020.0-Z4 | 5/16 | 5/16 | 7/16 | 2 | 4 | AlTiN | 0.020 |
| N76133 | SR420-0.313-D3-C020.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | | 0.020 |
| N76181 | SR420-0.313-D3-C020.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | AlTiN | 0.020 |
| N76134 | SR420-0.375-D1-C020.3-Z4 | 3/8 | 3/8 | 1/2 | 2 | 4 | | 0.020 |
| N76182 | SR420-0.375-D1-C020.3-Z4 | 3/8 | 3/8 | 1/2 | 2 | 4 | AlTiN | 0.020 |
| N76135 | SR420-0.375-D3-C020.3-Z4 | 3/8 | 3/8 | 1 | 2-1/2 | 4 | | 0.020 |
| N76183 | SR420-0.375-D3-C020.3-Z4 | 3/8 | 3/8 | 1 | 2-1/2 | 4 | AlTiN | 0.020 |
| N76136 | SR420-0.438-D1-C020.3-Z4 | 7/16 | 7/16 | 9/16 | 2-1/2 | 4 | | 0.020 |
| N76184 | SR420-0.438-D1-C020.3-Z4 | 7/16 | 7/16 | 9/16 | 2-1/2 | 4 | AlTiN | 0.020 |
| N76137 | SR420-0.438-D2-C020.3-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | | 0.020 |
| N76185 | SR420-0.438-D2-C020.3-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | AlTiN | 0.020 |
| N76138 | SR420-0.500-D1-C025.3-Z4 | 1/2 | 1/2 | 5/8 | 2-1/2 | 4 | | 0.025 |
| N76186 | SR420-0.500-D1-C025.3-Z4 | 1/2 | 1/2 | 5/8 | 2-1/2 | 4 | AlTiN | 0.025 |
| N76139 | SR420-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | | 0.025 |
| N76187 | SR420-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3 | 4 | AlTiN | 0.025 |
| N76140 | SR420-0.625-D1-C025.3-Z4 | 5/8 | 5/8 | 3/4 | 3 | 4 | | 0.025 |
| N76188 | SR420-0.625-D1-C025.3-Z4 | 5/8 | 5/8 | 3/4 | 3 | 4 | AlTiN | 0.025 |
| N76141 | SR420-0.625-D3-C025.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 4 | | 0.025 |
| N76189 | SR420-0.625-D3-C025.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 4 | AlTiN | 0.025 |
| N76142 | SR420-0.750-D1-C025.3-Z4 | 3/4 | 3/4 | 1 | 3 | 4 | | 0.025 |
| N76190 | SR420-0.750-D1-C025.3-Z4 | 3/4 | 3/4 | 1 | 3 | 4 | AlTiN | 0.025 |
| N76143 | SR420-0.750-D2-C025.3-Z4 | 3/4 | 3/4 | 1-5/8 | 4 | 4 | | 0.025 |
| N76191 | SR420-0.750-D2-C025.3-Z4 | 3/4 | 3/4 | 1-5/8 | 4 | 4 | AlTiN | 0.025 |
| N76144 | SR420-1.000-D1-C025.3-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | | 0.025 |
| N76192 | SR420-1.000-D1-C025.3-Z5 | 1 | 1 | 1-1/4 | 4 | 5 | AlTiN | 0.025 |
| N76145 | SR420-1.000-D2-C025.3-Z5 | 1 | 1 | 2 | 5 | 5 | | 0.025 |
| N76193 | SR420-1.000-D2-C025.3-Z5 | 1 | 1 | 2 | 5 | 5 | AlTiN | 0.025 |

DISCOUNT CODE D43

# ELITE HIGH PERFORMANCE- SR545

SOLID CARBIDE

HELIX




CHAMFER

CENTER CUTTING

FINE PITCH

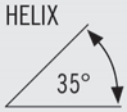
- Fine-pitch knuckle profile
- Designed for peripheral milling (25% of tool diameter maximum)
- Designed for stainless steel, titanium and high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N99050 | SR545-0.375-D1-C020.0-Z5 | 3/8 | 3/8 | 1/2 | 2 | 5 | | 0.020 |
| N99092 | SR545-0.375-D1-C020.0-Z5 | 3/8 | 3/8 | 1/2 | 2 | 5 | AlTiN | 0.020 |
| N99051 | SR545-0.375-D3-C020.0-Z5 | 3/8 | 3/8 | 1 | 2-1/2 | 5 | | 0.020 |
| N99093 | SR545-0.375-D3-C020.0-Z5 | 3/8 | 3/8 | 1 | 2-1/2 | 5 | AlTiN | 0.020 |
| N99053 | SR545-0.438-D2-C020.0-Z5 | 7/16 | 7/16 | 1 | 2-3/4 | 5 | | 0.020 |
| N99095 | SR545-0.438-D2-C020.0-Z5 | 7/16 | 7/16 | 1 | 2-3/4 | 5 | AlTiN | 0.020 |
| N99054 | SR545-0.500-D1-C025.0-Z5 | 1/2 | 1/2 | 5/8 | 2-1/2 | 5 | | 0.025 |
| N99096 | SR545-0.500-D1-C025.0-Z5 | 1/2 | 1/2 | 5/8 | 2-1/2 | 5 | AlTiN | 0.025 |
| N99055 | SR545-0.500-D3-C025.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | | 0.025 |
| N99097 | SR545-0.500-D3-C025.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | AlTiN | 0.025 |
| N99057 | SR545-0.625-D3-C025.0-Z5 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 5 | | 0.025 |
| N99099 | SR545-0.625-D3-C025.0-Z5 | 5/8 | 5/8 | 1-5/8 | 3-1/2 | 5 | AlTiN | 0.025 |
| N99058 | SR545-0.750-D1-C025.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | | 0.025 |
| N99100 | SR545-0.750-D1-C025.0-Z5 | 3/4 | 3/4 | 1 | 3 | 5 | AlTiN | 0.025 |
| N99059 | SR545-0.750-D2-C025.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | | 0.025 |
| N99101 | SR545-0.750-D2-C025.0-Z5 | 3/4 | 3/4 | 1-5/8 | 4 | 5 | AlTiN | 0.025 |
| N99061 | SR545-1.000-D2-C025.0-Z5 | 1 | 1 | 2 | 4 | 5 | | 0.025 |
| N99103 | SR545-1.000-D2-C025.0-Z5 | 1 | 1 | 2 | 4 | 5 | AlTiN | 0.025 |

# ELITE HIGH PERFORMANCE- S335M

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- Designed for slotting and pocketing in steels, stainless steels and high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N47768 | S335M-040-D2-R020.0-Z3 | 4mm | 4mm | 6mm | 50mm | 3 | AlTiN | 0.20mm |
| N47770 | S335M-040-D3-R020.0-Z3 | 4mm | 4mm | 12mm | 50mm | 3 | AlTiN | 0.20mm |
| N47772 | S335M-050-D3-R020.0-Z3 | 5mm | 5mm | 14mm | 50mm | 3 | AlTiN | 0.20mm |
| N47776 | S335M-060-D3-R050.0-Z3 | 6mm | 6mm | 16mm | 58mm | 3 | AlTiN | 0.50mm |
| N47778 | S335M-080-D1-R050.0-Z3 | 8mm | 8mm | 10mm | 59mm | 3 | AlTiN | 0.50mm |
| N47780 | S335M-080-D2-R050.0-Z3 | 8mm | 8mm | 20mm | 64mm | 3 | AlTiN | 0.50mm |
| N47784 | S335M-100-D2-R050.0-Z3 | 10mm | 10mm | 22mm | 73mm | 3 | AlTiN | 0.50mm |
| N47788 | S335M-120-D3-R100.0-Z3 | 12mm | 12mm | 32mm | 84mm | 3 | AlTiN | 1.00mm |
| N47796 | S335M-160-D2-R100.0-Z3 | 16mm | 16mm | 36mm | 89mm | 3 | AlTiN | 1.00mm |
| N47804 | S335M-200-D3-R100.0-Z3 | 20mm | 20mm | 50mm | 104mm | 3 | AlTiN | 1.00mm |
| N47806 | S335M-250-D2-R100.0-Z3 | 25mm | 25mm | 38mm | 115mm | 3 | AlTiN | 1.00mm |
| N47808 | S335M-250-D3-R100.0-Z3 | 25mm | 25mm | 60mm | 140mm | 3 | AlTiN | 1.00mm |

# ELITE HIGH PERFORMANCE- S545M

SOLID CARBIDE

HELIX 45°

SQUARE END

CENTER CUTTING

- Eccentric primary relief
- Ideal for peripheral finish milling in steel, stainless steel, titanium and high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N67967 | S545M-040-D3-S.0-Z5 | 4mm | 4mm | 11mm | 50mm | 5 | AlTiN |
| N67969 | S545M-060-D2-S.0-Z5 | 6mm | 6mm | 13mm | 57mm | 5 | AlTiN |
| N67970 | S545M-080-D2-S.0-Z5 | 8mm | 8mm | 19mm | 63mm | 5 | AlTiN |
| N67972 | S545M-100-D2-S.0-Z5 | 10mm | 10mm | 22mm | 72mm | 5 | AlTiN |
| N67973 | S545M-120-D2-S.0-Z5 | 12mm | 12mm | 26mm | 83mm | 5 | AlTiN |

# ELITE HIGH PERFORMANCE- S645M

SOLID CARBIDE

HELIX 45°

SQUARE END

CENTER CUTTING

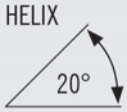
- Eccentric primary relief
- Ideal for peripheral finish milling in steel, stainless steel, titanium and high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N47858 | S645M-030-D4-S.0-Z6 | 3mm | 3mm | 12mm | 38mm | 6 | AlTiN |
| N47860 | S645M-040-D2-S.0-Z6 | 4mm | 4mm | 6mm | 50mm | 6 | AlTiN |
| N47862 | S645M-040-D3-S.0-Z6 | 4mm | 4mm | 12mm | 50mm | 6 | AlTiN |
| N47864 | S645M-050-D3-S.0-Z6 | 5mm | 5mm | 14mm | 50mm | 6 | AlTiN |
| N47866 | S645M-060-D1-S.0-Z6 | 6mm | 6mm | 8mm | 51mm | 6 | AlTiN |
| N47868 | S645M-060-D3-S.0-Z6 | 6mm | 6mm | 16mm | 58mm | 6 | AlTiN |
| N47870 | S645M-080-D1-S.0-Z6 | 8mm | 8mm | 10mm | 59mm | 6 | AlTiN |
| N47872 | S645M-080-D2-S.0-Z6 | 8mm | 8mm | 20mm | 64mm | 6 | AlTiN |
| N47874 | S645M-100-D1-S.0-Z6 | 10mm | 10mm | 11mm | 67mm | 6 | AlTiN |
| N47876 | S645M-100-D2-S.0-Z6 | 10mm | 10mm | 22mm | 73mm | 6 | AlTiN |
| N47880 | S645M-120-D3-S.0-Z6 | 12mm | 12mm | 32mm | 84mm | 6 | AlTiN |
| N47886 | S645M-160-D1-S.0-Z6 | 16mm | 16mm | 16mm | 83mm | 6 | AlTiN |
| N47888 | S645M-160-D2-S.0-Z6 | 16mm | 16mm | 36mm | 89mm | 6 | AlTiN |
| N47894 | S645M-200-D2-S.0-Z6 | 20mm | 20mm | 38mm | 101mm | 6 | AlTiN |
| N47896 | S645M-200-D3-S.0-Z6 | 20mm | 20mm | 50mm | 104mm | 6 | AlTiN |

# ELITE HIGH PERFORMANCE- SR420M

SOLID CARBIDE

HELIX




CHAMFER

CENTER CUTTING

FINE PITCH

- Fine-pitch knuckle profile
- Designed for steel and stainless steel

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N47902 | SR420M-060-D3-C050.0-Z4 | 6mm | 6mm | 16mm | 58mm | 4 | AlTiN | 0.50mm |
| N47904 | SR420M-080-D2-C050.0-Z4 | 8mm | 8mm | 20mm | 64mm | 4 | AlTiN | 0.50mm |
| N47906 | SR420M-100-D2-C050.0-Z4 | 10mm | 10mm | 22mm | 73mm | 4 | AlTiN | 0.50mm |
| N47907 | SR420M-120-D1-C100.0-Z4 | 12mm | 12mm | 12mm | 74mm | 4 | AlTiN | 1.00mm |
| N47908 | SR420M-120-D3-C100.0-Z4 | 12mm | 12mm | 32mm | 84mm | 4 | AlTiN | 1.00mm |
| N47910 | SR420M-140-D2-C100.0-Z4 | 14mm | 14mm | 32mm | 84mm | 4 | AlTiN | 1.00mm |
| N47912 | SR420M-160-D2-C100.0-Z4 | 16mm | 16mm | 36mm | 93mm | 4 | AlTiN | 1.00mm |
| N47916 | SR420M-200-D3-C100.0-Z4 | 20mm | 20mm | 50mm | 105mm | 4 | AlTiN | 1.00mm |

Niagara Cutter

NS240R

| SIDE MILLING - FINISHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_f$ (sf / min) | | $Z_n = 2$ | | | | | | | | | |
| | | | | | | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 |
| P | E / M / A 1 - 2 | 5 | 0.02 | 660 | n (rev/min) | 10080 | 8070 | 6720 | 5040 | 4030 | 3360 | 2520 | 2020 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 590 - 720 | $v_f$ (in/min) | 50.4 | 50.4 | 50.4 | 50.4 | 50.4 | 50.4 | 50.4 | 50.5 |
| | E / M / A 3 - 4 | 5 | 0.02 | 590 | n (rev/min) | 9020 | 7210 | 6010 | 4510 | 3610 | 3010 | 2250 | 1800 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 520 - 660 | $v_f$ (in/min) | 45.1 | 45.1 | 45.1 | 45.1 | 45.1 | 45.2 | 45.0 | 45.0 |
| | E / M / A 5 - 6 | 5 | 0.02 | 520 | n (rev/min) | 7950 | 6360 | 5300 | 3970 | 3180 | 2650 | 1990 | 1590 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 460 - 590 | $v_f$ (in/min) | 39.8 | 39.8 | 39.8 | 39.7 | 39.8 | 39.8 | 39.8 | 39.8 |
| M | E / M / A 8 - 9 | 5 | 0.02 | 330 | n (rev/min) | 5040 | 4030 | 3360 | 2520 | 2020 | 1680 | 1260 | 1010 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 260 - 390 | $v_f$ (in/min) | 25.2 | 25.2 | 25.2 | 25.2 | 25.3 | 25.2 | 25.2 | 25.3 |
| | E / M / A 10 - 11 | 5 | 0.02 | 260 | n (rev/min) | 3970 | 3180 | 2650 | 1990 | 1590 | 1320 | 990 | 790 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 200 - 330 | $v_f$ (in/min) | 19.9 | 19.9 | 19.9 | 19.9 | 19.9 | 19.8 | 19.8 | 19.8 |
| K | E 12 - 13 | 5 | 0.02 | 390 | n (rev/min) | 5960 | 4770 | 3970 | 2980 | 2380 | 1990 | 1490 | 1190 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 330 - 460 | $v_f$ (in/min) | 29.8 | 29.8 | 29.8 | 29.8 | 29.8 | 29.9 | 29.8 | 29.8 |
| | E 14 - 15 | 5 | 0.02 | 330 | n (rev/min) | 5040 | 4030 | 3360 | 2520 | 2020 | 1680 | 1260 | 1010 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 260 - 390 | $v_f$ (in/min) | 25.2 | 25.2 | 25.2 | 25.2 | 25.3 | 25.2 | 25.2 | 25.3 |
| N | E / M / A 16 | 5 | 0.02 | 2620 | n (rev/min) | 40030 | 32030 | 26690 | 20020 | 16010 | 13340 | 10010 | 8010 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 2300 - 2950 | $v_f$ (in/min) | 200.2 | 200.2 | 200.2 | 200.2 | 200.1 | 200.1 | 200.2 | 200.3 |
| | E / M / A 17 | 5 | 0.02 | 2620 | n (rev/min) | 40030 | 32030 | 26690 | 20020 | 16010 | 13340 | 10010 | 8010 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 2300 - 2950 | $v_f$ (in/min) | 200.2 | 200.2 | 200.2 | 200.2 | 200.1 | 200.1 | 200.2 | 200.3 |
| | E / M / A 18 | 5 | 0.02 | 1310 | n (rev/min) | 20020 | 16010 | 13340 | 10010 | 8010 | 6670 | 5000 | 4000 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 1150 - 1480 | $v_f$ (in/min) | 100.1 | 100.1 | 100.1 | 100.1 | 100.1 | 100.1 | 100.0 | 100.0 |
| S | E / M / A 19 | 5 | 0.02 | 160 | n (rev/min) | 2440 | 1960 | 1630 | 1220 | 980 | 810 | 610 | 490 |
| | | | | | $f_z$ (in) | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 | 0.0088 |
| | | | | 130 - 200 | $v_f$ (in/min) | 8.5 | 8.6 | 8.6 | 8.5 | 8.6 | 8.5 | 8.5 | 8.6 |
| | E / M / A 20 | 5 | 0.02 | 160 | n (rev/min) | 2440 | 1960 | 1630 | 1220 | 980 | 810 | 610 | 490 |
| | | | | | $f_z$ (in) | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 | 0.0088 |
| | | | | 130 - 200 | $v_f$ (in/min) | 8.5 | 8.6 | 8.6 | 8.5 | 8.6 | 8.5 | 8.5 | 8.6 |
| | E / M / A 21 | 5 | 0.02 | 130 | n (rev/min) | 1990 | 1590 | 1320 | 990 | 790 | 660 | 500 | 400 |
| | | | | | $f_z$ (in) | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 | 0.0088 |
| | | | | 100 - 160 | $v_f$ (in/min) | 7.0 | 7.0 | 6.9 | 6.9 | 6.9 | 6.9 | 7.0 | 7.0 |
| | E / M / A 22 | 5 | 0.02 | 330 | n (rev/min) | 5040 | 4030 | 3360 | 2520 | 2020 | 1680 | 1260 | 1010 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 260 - 390 | $v_f$ (in/min) | 25.2 | 25.2 | 25.2 | 25.2 | 25.3 | 25.2 | 25.2 | 25.3 |
| | A / D GRAPHITE | 5 | 0.02 | 3280 | n (rev/min) | 50120 | 40090 | 33410 | 25060 | 20050 | 16710 | 12530 | 10020 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 2950 - 3610 | $v_f$ (in/min) | 250.6 | 250.6 | 250.6 | 250.6 | 250.6 | 250.7 | 250.6 | 250.5 |
| | A / D PLASTIC (SOFT) | 5 | 0.02 | 3280 | n (rev/min) | 50120 | 40090 | 33410 | 25060 | 20050 | 16710 | 12530 | 10020 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 2950 - 3610 | $v_f$ (in/min) | 250.6 | 250.6 | 250.6 | 250.6 | 250.6 | 250.7 | 250.6 | 250.5 |
| | A / D PLASTIC (HARD) | 5 | 0.02 | 1970 | n (rev/min) | 30100 | 24080 | 20070 | 15050 | 12040 | 10030 | 7530 | 6020 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 |
| | | | | 1640 - 2300 | $v_f$ (in/min) | 150.5 | 150.5 | 150.5 | 150.5 | 150.5 | 150.5 | 150.6 | 150.5 |

Niagara Cutter

S335

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 3$ | | | | | | | | | |
| | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.0 | 1.00 | 395 | n (rev/min) | 24142 | 12071 | 6036 | 4024 | 3018 | 2414 | 2012 | 1509 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0010 | 0.0015 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
| | | | | 335 - 455 | $v_f$ (in/min) | 18.1 | 18.1 | 18.1 | 18.1 | 18.1 | 18.1 | 18.1 | 18.1 |
| | E 3 - 4 | 1.0 | 1.00 | 330 | n (rev/min) | 20170 | 10085 | 5042 | 3362 | 2521 | 2017 | 1681 | 1261 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0010 | 0.0015 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
| | | | | 270 - 390 | $v_f$ (in/min) | 15.1 | 15.1 | 15.1 | 15.1 | 15.1 | 15.1 | 15.1 | 15.1 |
| | E 5 - 6 | 1.0 | 1.00 | 260 | n (rev/min) | 15891 | 7946 | 3973 | 2649 | 1986 | 1589 | 1324 | 993 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0024 | 0.0032 |
| | | | | 200 - 320 | $v_f$ (in/min) | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 |
| M | E 8 - 9 | 1.0 | 1.00 | 260 | n (rev/min) | 15891 | 7946 | 3973 | 2649 | 1986 | 1589 | 1324 | 993 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0007 | 0.0010 | 0.0013 | 0.0016 | 0.0020 | 0.0026 |
| | | | | 230 - 290 | $v_f$ (in/min) | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 |
| | E 10 - 11 | 1.0 | 1.00 | 230 | n (rev/min) | 14058 | 7029 | 3514 | 2343 | 1757 | 1406 | 1171 | 879 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0007 | 0.0010 | 0.0013 | 0.0016 | 0.0020 | 0.0026 |
| | | | | 200 - 260 | $v_f$ (in/min) | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| K | E 12 - 13 | 1.0 | 1.00 | 385 | n (rev/min) | 23531 | 11766 | 5883 | 3922 | 2941 | 2353 | 1961 | 1471 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 325 - 445 | $v_f$ (in/min) | 19.9 | 19.9 | 19.9 | 19.9 | 19.9 | 19.9 | 19.9 | 19.9 |
| | E 14 - 15 | 1.0 | 1.00 | 340 | n (rev/min) | 20781 | 10390 | 5195 | 3463 | 2598 | 2078 | 1732 | 1299 |
| | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 280 - 400 | $v_f$ (in/min) | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 |
| S | E 19 | 1.0 | 1.00 | 110 | n (rev/min) | 6723 | 3362 | 1681 | 1121 | 840 | 672 | 560 | 420 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 80 - 140 | $v_f$ (in/min) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| | E 20 | 1.0 | 1.00 | 110 | n (rev/min) | 6723 | 3362 | 1681 | 1121 | 840 | 672 | 560 | 420 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 80 - 140 | $v_f$ (in/min) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| | E 21 | 1.0 | 1.00 | 70 | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 |
| | | | | 40 - 100 | $v_f$ (in/min) | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| | E 22 | 1.0 | 1.00 | 180 | n (rev/min) | 11002 | 5501 | 2750 | 1834 | 1375 | 1100 | 917 | 688 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0017 | 0.0023 |
| | | | | 120 - 240 | $v_f$ (in/min) | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

S335

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 3$ | | | | | | | | | |
| | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.0 | 0.20 | 525 | n (rev/min) | | 32088 | 16044 | 8022 | 5348 | 4011 | 3209 | 2674 | 2006 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 465 - 585 | $v_f$ (in/min) | | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 |
| | E 3 - 4 | 1.0 | 0.20 | 460 | n (rev/min) | | 28115 | 14058 | 7029 | 4686 | 3514 | 2812 | 2343 | 1757 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 400 - 520 | $v_f$ (in/min) | | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 |
| | E 5 - 6 | 1.0 | 0.20 | 330 | n (rev/min) | | 20170 | 10085 | 5042 | 3362 | 2521 | 2017 | 1681 | 1261 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 270 - 390 | $v_f$ (in/min) | | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 |
| M | E 8 - 9 | 1.0 | 0.20 | 280 | n (rev/min) | | 17114 | 8557 | 4278 | 2852 | 2139 | 1711 | 1426 | 1070 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0017 |
| | | | | 250 - 310 | $v_f$ (in/min) | | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 |
| | E 10 - 11 | 1.0 | 0.20 | 250 | n (rev/min) | | 15280 | 7640 | 3820 | 2547 | 1910 | 1528 | 1273 | 955 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0017 |
| | | | | 220 - 280 | $v_f$ (in/min) | | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |
| K | E 12 - 13 | 1.0 | 0.20 | 340 | n (rev/min) | | 20781 | 10390 | 5195 | 3463 | 2598 | 2078 | 1732 | 1299 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 280 - 400 | $v_f$ (in/min) | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| | E 14 - 15 | 1.0 | 0.20 | 440 | n (rev/min) | | 26893 | 13446 | 6723 | 4482 | 3362 | 2689 | 2241 | 1681 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 380 - 500 | $v_f$ (in/min) | | 9.1 | 9.1 | 9.1 | 9.1 | 9.1 | 9.1 | 9.1 | 9.1 |
| S | E 19 | 0.5 | 0.20 | 120 | n (rev/min) | | 7334 | 3667 | 1834 | 1222 | 917 | 733 | 611 | 458 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 90 - 150 | $v_f$ (in/min) | | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| | E 20 | 0.5 | 0.20 | 120 | n (rev/min) | | 7334 | 3667 | 1834 | 1222 | 917 | 733 | 611 | 458 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 90 - 150 | $v_f$ (in/min) | | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| | E 21 | 0.5 | 0.20 | 80 | n (rev/min) | | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 |
| | | | | 50 - 110 | $v_f$ (in/min) | | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| | E 22 | 0.5 | 0.20 | 220 | n (rev/min) | | 13446 | 6723 | 3362 | 2241 | 1681 | 1345 | 1121 | 840 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0003 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0017 | 0.0023 |
| | | | | 160 - 280 | $v_f$ (in/min) | | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

SB335

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | $Z_n = 3$ | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.0 | 0.75 | | 315 | | n (rev/min) | 19253 | 9626 | 4813 | 3209 | 2407 | 1925 | 1604 | 1203 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0010 | 0.0015 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
| | | | | 255 | - | 375 | $v_f$ (in/min) | 14.4 | 14.4 | 14.4 | 14.4 | 14.4 | 14.4 | 14.4 | 14.4 |
| | E 3 - 4 | 1.0 | 0.75 | | 264 | | n (rev/min) | 16136 | 8068 | 4034 | 2689 | 2017 | 1614 | 1345 | 1008 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0010 | 0.0015 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
| | | | | 204 | - | 324 | $v_f$ (in/min) | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 |
| | E 5 - 6 | 1.0 | 0.75 | | 208 | | n (rev/min) | 12713 | 6356 | 3178 | 2119 | 1589 | 1271 | 1059 | 795 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0024 | 0.0032 |
| | | | | 148 | - | 268 | $v_f$ (in/min) | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 |
| M | E 8 - 9 | 1.0 | 0.75 | | 208 | | n (rev/min) | 12713 | 6356 | 3178 | 2119 | 1589 | 1271 | 1059 | 795 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0007 | 0.0010 | 0.0013 | 0.0016 | 0.0020 | 0.0026 |
| | | | | 178 | - | 238 | $v_f$ (in/min) | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 |
| | E 10 - 11 | 1.0 | 0.75 | | 185 | | n (rev/min) | 11307 | 5654 | 2827 | 1885 | 1413 | 1131 | 942 | 707 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0007 | 0.0010 | 0.0013 | 0.0016 | 0.0020 | 0.0026 |
| | | | | 155 | - | 215 | $v_f$ (in/min) | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| K | E 12 - 13 | 1.0 | 0.75 | | 308 | | n (rev/min) | 18825 | 9412 | 4706 | 3137 | 2353 | 1882 | 1569 | 1177 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 248 | - | 368 | $v_f$ (in/min) | 15.9 | 15.9 | 15.9 | 15.9 | 15.9 | 15.9 | 15.9 | 15.9 |
| | E 14 - 15 | 1.0 | 0.75 | | 272 | | n (rev/min) | 16625 | 8312 | 4156 | 2771 | 2078 | 1662 | 1385 | 1039 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 212 | - | 332 | $v_f$ (in/min) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 |
| S | E 19 | 1.0 | 0.75 | | 88 | | n (rev/min) | 5379 | 2689 | 1345 | 896 | 672 | 538 | 448 | 336 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 58 | - | 118 | $v_f$ (in/min) | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| | E 20 | 1.0 | 0.75 | | 88 | | n (rev/min) | 5379 | 2689 | 1345 | 896 | 672 | 538 | 448 | 336 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 58 | - | 118 | $v_f$ (in/min) | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| | E 21 | 1.0 | 0.75 | | 56 | | n (rev/min) | 3423 | 1711 | 856 | 570 | 428 | 342 | 285 | 214 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 |
| | | | | 26 | - | 86 | $v_f$ (in/min) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| | E 22 | 1.0 | 0.75 | | 145 | | n (rev/min) | 8862 | 4431 | 2216 | 1477 | 1108 | 886 | 739 | 554 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0017 | 0.0023 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

SB335

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | $Z_n = 3$ | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.0 | 0.20 | | 420 | | n (rev/min) | 25670 | 12835 | 6418 | 4278 | 3209 | 2567 | 2139 | 1604 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 360 | - | 480 | $v_f$ (in/min) | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 |
| | E 3 - 4 | 1.0 | 0.20 | | 368 | | n (rev/min) | 22492 | 11246 | 5623 | 3749 | 2812 | 2249 | 1874 | 1406 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 308 | - | 428 | $v_f$ (in/min) | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 |
| | E 5 - 6 | 1.0 | 0.20 | | 264 | | n (rev/min) | 16136 | 8068 | 4034 | 2689 | 2017 | 1614 | 1345 | 1008 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 204 | - | 324 | $v_f$ (in/min) | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 |
| M | E 8 - 9 | 1.0 | 0.20 | | 225 | | n (rev/min) | 13752 | 6876 | 3438 | 2292 | 1719 | 1375 | 1146 | 860 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0017 |
| | | | | 195 | - | 255 | $v_f$ (in/min) | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 |
| | E 10 - 11 | 1.0 | 0.20 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0017 |
| | | | | 170 | - | 230 | $v_f$ (in/min) | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| K | E 12 - 13 | 1.0 | 0.20 | | 272 | | n (rev/min) | 16625 | 8312 | 4156 | 2771 | 2078 | 1662 | 1385 | 1039 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 212 | - | 332 | $v_f$ (in/min) | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 |
| | E 14 - 15 | 1.0 | 0.20 | | 350 | | n (rev/min) | 21392 | 10696 | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 290 | - | 410 | $v_f$ (in/min) | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 |
| S | E 19 | 0.5 | 0.20 | | 96 | | n (rev/min) | 5868 | 2934 | 1467 | 978 | 733 | 587 | 489 | 367 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 66 | - | 126 | $v_f$ (in/min) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| | E 20 | 0.5 | 0.20 | | 96 | | n (rev/min) | 5868 | 2934 | 1467 | 978 | 733 | 587 | 489 | 367 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 66 | - | 126 | $v_f$ (in/min) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| | E 21 | 0.5 | 0.20 | | 64 | | n (rev/min) | 3912 | 1956 | 978 | 652 | 489 | 391 | 326 | 244 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 |
| | | | | 34 | - | 94 | $v_f$ (in/min) | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| | E 22 | 0.5 | 0.20 | | 175 | | n (rev/min) | 10696 | 5348 | 2674 | 1783 | 1337 | 1070 | 891 | 669 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0017 | 0.0023 |
| | | | | 115 | - | 235 | $v_f$ (in/min) | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

SN335

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 3$ | | | | | | | | | |
| | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.0 | 1.00 | 316 | n (rev/min) | 19314 | 9657 | 4828 | 3219 | 2414 | 1931 | 1609 | 1207 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 256 - 376 | $v_f$ (in/min) | 10.9 | 10.9 | 10.9 | 10.9 | 10.9 | 10.9 | 10.9 | 10.9 |
| | E 3 - 4 | 1.0 | 1.00 | 264 | n (rev/min) | 16136 | 8068 | 4034 | 2689 | 2017 | 1614 | 1345 | 1008 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 204 - 324 | $v_f$ (in/min) | 9.1 | 9.1 | 9.1 | 9.1 | 9.1 | 9.1 | 9.1 | 9.1 |
| | E 5 - 6 | 1.0 | 1.00 | 210 | n (rev/min) | 12835 | 6418 | 3209 | 2139 | 1604 | 1284 | 1070 | 802 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 150 - 270 | $v_f$ (in/min) | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 |
| M | E 8 - 9 | 1.0 | 1.00 | 210 | n (rev/min) | 12835 | 6418 | 3209 | 2139 | 1604 | 1284 | 1070 | 802 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 |
| | | | | 180 - 240 | $v_f$ (in/min) | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |
| | E 10 - 11 | 1.0 | 1.00 | 185 | n (rev/min) | 11307 | 5654 | 2827 | 1885 | 1413 | 1131 | 942 | 707 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 |
| | | | | 155 - 215 | $v_f$ (in/min) | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| K | E 12 - 13 | 1.0 | 1.00 | 310 | n (rev/min) | 18947 | 9474 | 4737 | 3158 | 2368 | 1895 | 1579 | 1184 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 250 - 370 | $v_f$ (in/min) | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 |
| | E 14 - 15 | 1.0 | 1.00 | 272 | n (rev/min) | 16625 | 8312 | 4156 | 2771 | 2078 | 1662 | 1385 | 1039 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 212 - 332 | $v_f$ (in/min) | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 |
| S | E 19 | 1.0 | 1.00 | 88 | n (rev/min) | 5379 | 2689 | 1345 | 896 | 672 | 538 | 448 | 336 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 58 - 118 | $v_f$ (in/min) | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| | E 20 | 1.0 | 1.00 | 88 | n (rev/min) | 5379 | 2689 | 1345 | 896 | 672 | 538 | 448 | 336 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 58 - 118 | $v_f$ (in/min) | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| | E 21 | 1.0 | 1.00 | 56 | n (rev/min) | 3423 | 1711 | 856 | 570 | 428 | 342 | 285 | 214 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0001 | 0.0003 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0011 |
| | | | | 26 - 86 | $v_f$ (in/min) | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| | E 22 | 1.0 | 1.00 | 144 | n (rev/min) | 8801 | 4401 | 2200 | 1467 | 1100 | 880 | 733 | 550 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0017 |
| | | | | 84 - 204 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

SN335

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 3$ | | | | | | | | | |
| | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.0 | 0.20 | 420 | n (rev/min) | 25670 | 12835 | 6418 | 4278 | 3209 | 2567 | 2139 | 1604 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 360 - 480 | $v_f$ (in/min) | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 |
| | E 3 - 4 | 1.0 | 0.20 | 368 | n (rev/min) | 22492 | 11246 | 5623 | 3749 | 2812 | 2249 | 1874 | 1406 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 308 - 428 | $v_f$ (in/min) | 5.9 | 5.9 | 5.9 | 5.9 | 5.9 | 5.9 | 5.9 | 5.9 |
| | E 5 - 6 | 1.0 | 0.20 | 264 | n (rev/min) | 16136 | 8068 | 4034 | 2689 | 2017 | 1614 | 1345 | 1008 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 204 - 324 | $v_f$ (in/min) | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| M | E 8 - 9 | 1.0 | 0.20 | 224 | n (rev/min) | 13691 | 6845 | 3423 | 2282 | 1711 | 1369 | 1141 | 856 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0010 | 0.0013 |
| | | | | 194 - 254 | $v_f$ (in/min) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| | E 10 - 11 | 1.0 | 0.20 | 200 | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0010 | 0.0013 |
| | | | | 170 - 230 | $v_f$ (in/min) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| K | E 12 - 13 | 1.0 | 0.20 | 272 | n (rev/min) | 16625 | 8312 | 4156 | 2771 | 2078 | 1662 | 1385 | 1039 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 212 - 332 | $v_f$ (in/min) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 |
| | E 14 - 15 | 1.0 | 0.20 | 352 | n (rev/min) | 21514 | 10757 | 5379 | 3586 | 2689 | 2151 | 1793 | 1345 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 292 - 412 | $v_f$ (in/min) | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 |
| S | E 19 | 0.5 | 0.20 | 96 | n (rev/min) | 5868 | 2934 | 1467 | 978 | 733 | 587 | 489 | 367 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 66 - 126 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| | E 20 | 0.5 | 0.20 | 96 | n (rev/min) | 5868 | 2934 | 1467 | 978 | 733 | 587 | 489 | 367 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 66 - 126 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| | E 21 | 0.5 | 0.20 | 64 | n (rev/min) | 3912 | 1956 | 978 | 652 | 489 | 391 | 326 | 244 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0001 | 0.0003 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0011 |
| | | | | 34 - 94 | $v_f$ (in/min) | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| | E 22 | 0.5 | 0.20 | 176 | n (rev/min) | 10757 | 5379 | 2689 | 1793 | 1345 | 1076 | 896 | 672 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0017 |
| | | | | 116 - 236 | $v_f$ (in/min) | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**S545 / S545R**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 5$ | | | | | | | | | |
| | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.0 | 0.25 | 500 | n (rev/min) | | 30560 | 15280 | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | | | $f_z$ (in) | | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 400 - 700 | $v_f$ (in/min) | | 43.0 | 43.0 | 43.0 | 43.0 | 43.0 | 43.0 | 43.0 | 43.0 |
| | E 3 - 4 | 1.0 | 0.25 | 380 | n (rev/min) | | 23226 | 11613 | 5806 | 3871 | 2903 | 2323 | 1935 | 1452 |
| | | | | | $f_z$ (in) | | 0.0003 | 0.0005 | 0.0010 | 0.0015 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
| | | | | 320 - 700 | $v_f$ (in/min) | | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 |
| | E 5 - 6 | 1.0 | 0.20 | 300 | n (rev/min) | | 18336 | 9168 | 4584 | 3056 | 2292 | 1834 | 1528 | 1146 |
| | | | | | $f_z$ (in) | | 0.0002 | 0.0004 | 0.0008 | 0.0012 | 0.0016 | 0.0019 | 0.0023 | 0.0031 |
| | | | | 200 - 400 | $v_f$ (in/min) | | 17.8 | 17.8 | 17.8 | 17.8 | 17.8 | 17.8 | 17.8 | 17.8 |
| H | M / A / D 7a (48>52HRc) | 1.0 | 0.10 | 150 | n (rev/min) | | 9168 | 4584 | 2292 | 1528 | 1146 | 917 | 764 | 573 |
| | | | | | $f_z$ (in) | | 0.0002 | 0.0004 | 0.0008 | 0.0012 | 0.0016 | 0.0019 | 0.0023 | 0.0031 |
| | | | | 80 - 200 | $v_f$ (in/min) | | 8.9 | 8.9 | 8.9 | 8.9 | 8.9 | 8.9 | 8.9 | 8.9 |
| M | E 8 - 9 | 1.0 | 0.20 | 250 | n (rev/min) | | 15280 | 7640 | 3820 | 2547 | 1910 | 1528 | 1273 | 955 |
| | | | | | $f_z$ (in) | | 0.0002 | 0.0004 | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0024 | 0.0032 |
| | | | | 150 - 350 | $v_f$ (in/min) | | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |
| | E 10 - 11 | 1.0 | 0.20 | 200 | n (rev/min) | | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | $f_z$ (in) | | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 150 - 350 | $v_f$ (in/min) | | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 |
| K | E 12 - 13 | 1.0 | 0.25 | 300 | n (rev/min) | | 18336 | 9168 | 4584 | 3056 | 2292 | 1834 | 1528 | 1146 |
| | | | | | $f_z$ (in) | | 0.0005 | 0.0009 | 0.0018 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |
| | | | | 250 - 350 | $v_f$ (in/min) | | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 |
| | E 12 - 13 | 1.0 | 0.25 | 180 | n (rev/min) | | 11002 | 5501 | 2750 | 1834 | 1375 | 1100 | 917 | 688 |
| | | | | | $f_z$ (in) | | 0.0002 | 0.0004 | 0.0008 | 0.0012 | 0.0016 | 0.0019 | 0.0023 | 0.0031 |
| | | | | 150 - 230 | $v_f$ (in/min) | | 10.7 | 10.7 | 10.7 | 10.7 | 10.7 | 10.7 | 10.7 | 10.7 |
| N | E / M / A 16 | 2.0 | 0.05 | 800 | n (rev/min) | | 11002 | 5501 | 2750 | 1834 | 1375 | 1100 | 917 | 688 |
| | | | | | $f_z$ (in) | | 0.0005 | 0.0010 | 0.0020 | 0.0030 | 0.0040 | 0.0050 | 0.0060 | 0.0080 |
| | | | | 640 - 1320 | $v_f$ (in/min) | | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 |
| | E / M / A 17 | 2.0 | 0.05 | 800 | n (rev/min) | | 11002 | 5501 | 2750 | 1834 | 1375 | 1100 | 917 | 688 |
| | | | | | $f_z$ (in) | | 0.0005 | 0.0010 | 0.0020 | 0.0030 | 0.0040 | 0.0050 | 0.0060 | 0.0080 |
| | | | | 640 - 1320 | $v_f$ (in/min) | | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 |
| S | E 19 | 1.0 | 0.05 | 90 | n (rev/min) | | 5501 | 2750 | 1375 | 917 | 688 | 550 | 458 | 344 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 60 - 120 | $v_f$ (in/min) | | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| | E 20 | 1.0 | 0.05 | 90 | n (rev/min) | | 5501 | 2750 | 1375 | 917 | 688 | 550 | 458 | 344 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 60 - 120 | $v_f$ (in/min) | | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| | E 21 | 1.0 | 0.05 | 90 | n (rev/min) | | 5501 | 2750 | 1375 | 917 | 688 | 550 | 458 | 344 |
| | | | | | $f_z$ (in) | | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 60 - 120 | $v_f$ (in/min) | | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| | E 22 | 1.0 | 0.15 | 120 | n (rev/min) | | 7334 | 3667 | 1834 | 1222 | 917 | 733 | 611 | 458 |
| | | | | | $f_z$ (in) | | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 100 - 180 | $v_f$ (in/min) | | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**S738 / S938 / S738R / S938R**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 7$ | | | $Z_n = 9$ | | |
| | | | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.5 | 0.05 | | 525 | | n (rev/min) | 8022 | 5348 | 4011 | 3209 | 2674 | 2006 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0023 | 0.0026 | 0.0030 |
| | | | | 425 | - | 725 | $v_f$ (in/min) | 56.2 | 56.2 | 56.2 | 66.4 | 62.6 | 54.1 |
| | E 3 - 4 | 1.5 | 0.05 | | 475 | | n (rev/min) | 7258 | 4839 | 3629 | 2903 | 2419 | 1815 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0023 | 0.0026 | 0.0030 |
| | | | | 415 | - | 795 | $v_f$ (in/min) | 50.8 | 50.8 | 50.8 | 60.1 | 56.6 | 49.0 |
| | E 5 - 6 | 1.5 | 0.05 | | 450 | | n (rev/min) | 6876 | 4584 | 3438 | 2750 | 2292 | 1719 |
| | | | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0022 | 0.0025 | 0.0028 | 0.0033 |
| | | | | 350 | - | 550 | $v_f$ (in/min) | 52.9 | 54.5 | 52.9 | 61.9 | 57.8 | 51.1 |
| M | E 8 - 9 | 1.5 | 0.05 | | 425 | | n (rev/min) | 6494 | 4329 | 3247 | 2598 | 2165 | 1624 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0023 | 0.0025 | 0.0030 |
| | | | | 325 | - | 525 | $v_f$ (in/min) | 45.5 | 45.5 | 45.5 | 53.8 | 48.7 | 43.8 |
| | E 10 - 11 | 1.5 | 0.05 | | 400 | | n (rev/min) | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0012 | 0.0016 | 0.0018 | 0.0020 | 0.0024 |
| | | | | 350 | - | 550 | $v_f$ (in/min) | 34.2 | 34.2 | 34.2 | 39.6 | 36.7 | 33.0 |
| K | E 12 - 13 | 1.5 | 0.05 | | 450 | | n (rev/min) | 6876 | 4584 | 3438 | 2750 | 2292 | 1719 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 | 0.0020 | 0.0023 | 0.0027 |
| | | | | 400 | - | 500 | $v_f$ (in/min) | 43.3 | 44.9 | 43.3 | 49.5 | 47.4 | 41.8 |
| | E 14 - 15 | 1.5 | 0.05 | | 500 | | n (rev/min) | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 | 0.0020 | 0.0023 | 0.0027 |
| | | | | 470 | - | 550 | $v_f$ (in/min) | 48.1 | 49.9 | 48.1 | 55.0 | 52.7 | 46.4 |
| S | E 19 | 1.5 | 0.05 | | 140 | | n (rev/min) | 2139 | 1426 | 1070 | 856 | 713 | 535 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0017 | 0.0019 | 0.0023 |
| | | | | 110 | - | 170 | $v_f$ (in/min) | 12.0 | 11.0 | 11.2 | 13.1 | 12.2 | 11.1 |
| | E 20 | 1.5 | 0.05 | | 100 | | n (rev/min) | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0017 | 0.0019 | 0.0023 |
| | | | | 70 | - | 130 | $v_f$ (in/min) | 8.6 | 7.8 | 8.0 | 9.4 | 8.7 | 7.9 |
| | E 21 | 1.5 | 0.05 | | 100 | | n (rev/min) | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0017 | 0.0019 | 0.0023 |
| | | | | 70 | - | 130 | $v_f$ (in/min) | 8.6 | 7.8 | 8.0 | 9.4 | 8.7 | 7.9 |
| | E 22 | 1.5 | 0.05 | | 275 | | n (rev/min) | 4202 | 2801 | 2101 | 1681 | 1401 | 1051 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0023 | 0.0025 | 0.0030 |
| | | | | 255 | - | 335 | $v_f$ (in/min) | 29.4 | 29.4 | 29.4 | 34.8 | 31.5 | 28.4 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

SR420

| SLOTTING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.00 | 1.00 | 300 | n (rev/min) | 4584 | 3056 | 2292 | 1834 | 1528 | 1146 |
| | | | | | $f_z$ (in) | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0031 |
| | | | | 200 - 400 | $v_f$ (in/min) | 14.3 | 14.3 | 14.3 | 14.3 | 14.3 | 14.3 |
| | E 3 - 4 | 1.00 | 1.00 | 250 | n (rev/min) | 3820 | 2547 | 1910 | 1528 | 1273 | 955 |
| | | | | | $f_z$ (in) | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0016 | 0.0021 |
| | | | | 225 - 270 | $v_f$ (in/min) | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 |
| | E 5 - 6 | 1.00 | 1.00 | 380 | n (rev/min) | 5806 | 3871 | 2903 | 2323 | 1935 | 1452 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0018 |
| | | | | 330 - 430 | $v_f$ (in/min) | 10.2 | 10.2 | 10.2 | 10.2 | 10.2 | 10.2 |
| M | E 8 - 9 | 0.50 | 1.00 | 380 | n (rev/min) | 5806 | 3871 | 2903 | 2323 | 1935 | 1452 |
| | | | | | $f_z$ (in) | 0.0005 | 0.0008 | 0.0011 | 0.0014 | 0.0016 | 0.0022 |
| | | | | 330 - 430 | $v_f$ (in/min) | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 |
| | E 10 - 11 | 0.30 | 1.00 | 200 | n (rev/min) | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 |
| | | | | 150 - 250 | $v_f$ (in/min) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 |
| K | E 12 - 13 | 1.00 | 1.00 | 380 | n (rev/min) | 5806 | 3871 | 2903 | 2323 | 1935 | 1452 |
| | | | | | $f_z$ (in) | 0.0012 | 0.0017 | 0.0023 | 0.0029 | 0.0035 | 0.0046 |
| | | | | 330 - 430 | $v_f$ (in/min) | 26.9 | 26.9 | 26.9 | 26.9 | 26.9 | 26.9 |
| | E 14 - 15 | 0.30 | 1.00 | 150 | n (rev/min) | 2292 | 1528 | 1146 | 917 | 764 | 573 |
| | | | | | $f_z$ (in) | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0020 | 0.0027 |
| | | | | 100 - 200 | $v_f$ (in/min) | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.00 | 0.40 | 300 | n (rev/min) | 4584 | 3056 | 2292 | 1834 | 1528 | 1146 |
| | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0024 | 0.0029 | 0.0039 |
| | | | | 240 - 360 | $v_f$ (in/min) | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 |
| | E 3 - 4 | 1.00 | 0.40 | 250 | n (rev/min) | 3820 | 2547 | 1910 | 1528 | 1273 | 955 |
| | | | | | $f_z$ (in) | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0020 | 0.0027 |
| | | | | 190 - 310 | $v_f$ (in/min) | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 |
| | E 5 - 6 | 1.00 | 0.40 | 175 | n (rev/min) | 2674 | 1783 | 1337 | 1070 | 891 | 669 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 115 - 235 | $v_f$ (in/min) | 5.9 | 5.9 | 5.9 | 5.9 | 5.9 | 5.9 |
| M | E 8 - 9 | 1.00 | 0.40 | 380 | n (rev/min) | 5806 | 3871 | 2903 | 2323 | 1935 | 1452 |
| | | | | | $f_z$ (in) | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0020 | 0.0027 |
| | | | | 350 - 410 | $v_f$ (in/min) | 15.7 | 15.7 | 15.7 | 15.7 | 15.7 | 15.7 |
| | E 10 - 11 | 1.00 | 0.30 | 200 | n (rev/min) | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 170 - 230 | $v_f$ (in/min) | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| K | E 12 - 13 | 1.00 | 0.40 | 380 | n (rev/min) | 5806 | 3871 | 2903 | 2323 | 1935 | 1452 |
| | | | | | $f_z$ (in) | 0.0015 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |
| | | | | 320 - 440 | $v_f$ (in/min) | 33.7 | 33.7 | 33.7 | 33.7 | 33.7 | 33.7 |
| | E 14 - 15 | 1.00 | 0.30 | 150 | n (rev/min) | 2292 | 1528 | 1146 | 917 | 764 | 573 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 90 - 210 | $v_f$ (in/min) | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 |

SR545

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 5$ | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.00 | 0.30 | 300 | n (rev/min) | 4584 | 3056 | 2292 | 1834 | 1528 | 1146 |
| | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0024 | 0.0029 | 0.0039 |
| | | | | 200 - 400 | $v_f$ (in/min) | 22.3 | 22.3 | 22.3 | 22.3 | 22.3 | 22.3 |
| | E 3 - 4 | 1.00 | 0.30 | 250 | n (rev/min) | 3820 | 2547 | 1910 | 1528 | 1273 | 955 |
| | | | | | $f_z$ (in) | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0020 | 0.0027 |
| | | | | 225 - 275 | $v_f$ (in/min) | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 |
| | E 5 - 6 | 1.00 | 0.30 | 175 | n (rev/min) | 2674 | 1783 | 1337 | 1070 | 891 | 669 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 150 - 200 | $v_f$ (in/min) | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 |
| M | E 8 - 9 | 1.00 | 0.30 | 380 | n (rev/min) | 5806 | 3871 | 2903 | 2323 | 1935 | 1452 |
| | | | | | $f_z$ (in) | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0020 | 0.0027 |
| | | | | 330 - 430 | $v_f$ (in/min) | 19.6 | 19.6 | 19.6 | 19.6 | 19.6 | 19.6 |
| | E 10 - 11 | 1.00 | 0.25 | 200 | n (rev/min) | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | | | 150 - 250 | $v_f$ (in/min) | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| K | E 12 - 13 | 1.00 | 0.30 | 380 | n (rev/min) | 5806 | 3871 | 2903 | 2323 | 1935 | 1452 |
| | | | | | $f_z$ (in) | 0.0015 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |
| | | | | 330 - 430 | $v_f$ (in/min) | 42.1 | 42.1 | 42.1 | 42.1 | 42.1 | 42.1 |
| | E 14 - 15 | 1.00 | 0.25 | 150 | n (rev/min) | 2292 | 1528 | 1146 | 917 | 764 | 573 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 100 - 200 | $v_f$ (in/min) | 9.7 | 9.7 | 9.7 | 9.7 | 9.7 | 9.7 |
| S | E 22 | 1.0 | 0.20 | 275 | n (rev/min) | 4202 | 2801 | 2101 | 1681 | 1401 | 1051 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 225 - 325 | $v_f$ (in/min) | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

S335M

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 3$ | 1.5 | 3 | 6 | 10 | 12 | 16 | 18 | 25 |
| P | E 1 - 2 | 1.0 | 1.00 | 120 | n (rev/min) | | 25460 | 12730 | 6370 | 3820 | 3180 | 2390 | 2120 | 1530 |
| | | | | | $f_z$ (mm) | | 0.006 | 0.012 | 0.024 | 0.040 | 0.048 | 0.064 | 0.072 | 0.100 |
| | | | | 102 - 139 | $v_f$ (mm/min) | | 458 | 458 | 459 | 458 | 458 | 459 | 458 | 459 |
| | E 3 - 4 | 1.0 | 1.00 | 101 | n (rev/min) | | 21430 | 10720 | 5360 | 3210 | 2680 | 2010 | 1790 | 1290 |
| | | | | | $f_z$ (mm) | | 0.006 | 0.012 | 0.024 | 0.040 | 0.048 | 0.064 | 0.072 | 0.100 |
| | | | | 82 - 119 | $v_f$ (mm/min) | | 386 | 386 | 386 | 385 | 386 | 386 | 387 | 387 |
| | E 5 - 6 | 1.0 | 1.00 | 79 | n (rev/min) | | 16760 | 8380 | 4190 | 2510 | 2100 | 1570 | 1400 | 1010 |
| | | | | | $f_z$ (mm) | | 0.005 | 0.010 | 0.019 | 0.032 | 0.038 | 0.051 | 0.058 | 0.080 |
| | | | | 61 - 98 | $v_f$ (mm/min) | | 241 | 241 | 241 | 241 | 242 | 241 | 242 | 242 |
| M | E 8 - 9 | 1.0 | 1.00 | 79 | n (rev/min) | | 16760 | 8380 | 4190 | 2510 | 2100 | 1570 | 1400 | 1010 |
| | | | | | $f_z$ (mm) | | 0.004 | 0.008 | 0.016 | 0.026 | 0.031 | 0.042 | 0.047 | 0.065 |
| | | | | 70 - 88 | $v_f$ (mm/min) | | 196 | 196 | 196 | 196 | 197 | 196 | 197 | 197 |
| | E 10 - 11 | 1.0 | 1.00 | 70 | n (rev/min) | | 14850 | 7430 | 3710 | 2230 | 1860 | 1390 | 1240 | 890 |
| | | | | | $f_z$ (mm) | | 0.004 | 0.008 | 0.016 | 0.026 | 0.031 | 0.042 | 0.047 | 0.065 |
| | | | | 61 - 79 | $v_f$ (mm/min) | | 174 | 174 | 174 | 174 | 174 | 173 | 174 | 174 |
| K | E 12 - 13 | 1.0 | 1.00 | 117 | n (rev/min) | | 24830 | 12410 | 6210 | 3720 | 3100 | 2330 | 2070 | 1490 |
| | | | | | $f_z$ (mm) | | 0.007 | 0.014 | 0.027 | 0.045 | 0.054 | 0.072 | 0.081 | 0.113 |
| | | | | 99 - 136 | $v_f$ (mm/min) | | 503 | 503 | 503 | 502 | 502 | 503 | 503 | 503 |
| | E 14 - 15 | 1.0 | 1.00 | 104 | n (rev/min) | | 22070 | 11030 | 5520 | 3310 | 2760 | 2070 | 1840 | 1320 |
| | | | | | $f_z$ (mm) | | 0.007 | 0.014 | 0.027 | 0.045 | 0.054 | 0.072 | 0.081 | 0.113 |
| | | | | 85 - 122 | $v_f$ (mm/min) | | 447 | 447 | 447 | 447 | 447 | 447 | 447 | 446 |
| S | E 19 | 1.0 | 1.00 | 34 | n (rev/min) | | 7220 | 3610 | 1800 | 1080 | 900 | 680 | 600 | 430 |
| | | | | | $f_z$ (mm) | | 0.003 | 0.005 | 0.011 | 0.018 | 0.022 | 0.029 | 0.032 | 0.045 |
| | | | | 24 - 43 | $v_f$ (mm/min) | | 58 | 58 | 58 | 58 | 58 | 59 | 58 | 58 |
| | E 20 | 1.0 | 1.00 | 34 | n (rev/min) | | 7220 | 3610 | 1800 | 1080 | 900 | 680 | 600 | 430 |
| | | | | | $f_z$ (mm) | | 0.003 | 0.005 | 0.011 | 0.018 | 0.022 | 0.029 | 0.032 | 0.045 |
| | | | | 24 - 43 | $v_f$ (mm/min) | | 58 | 58 | 58 | 58 | 58 | 59 | 58 | 58 |
| | E 21 | 1.0 | 1.00 | 21 | n (rev/min) | | 4460 | 2230 | 1110 | 670 | 560 | 420 | 370 | 270 |
| | | | | | $f_z$ (mm) | | 0.002 | 0.005 | 0.009 | 0.015 | 0.018 | 0.024 | 0.027 | 0.038 |
| | | | | 12 - 30 | $v_f$ (mm/min) | | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | E 22 | 1.0 | 1.00 | 55 | n (rev/min) | | 11670 | 5840 | 2920 | 1750 | 1460 | 1090 | 970 | 700 |
| | | | | | $f_z$ (mm) | | 0.003 | 0.007 | 0.014 | 0.023 | 0.027 | 0.036 | 0.041 | 0.057 |
| | | | | 37 - 73 | $v_f$ (mm/min) | | 120 | 120 | 120 | 120 | 120 | 119 | 119 | 120 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

S335M

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 3$ | | | | | | | | | |
| | | | | | | 1.5 | 3 | 6 | 10 | 12 | 16 | 18 | 25 |
| P | E 1 - 2 | 1.0 | 0.20 | 160 | n (rev/min) | 33950 | 16980 | 8490 | 5090 | 4240 | 3180 | 2830 | 2040 |
| | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.011 | 0.018 | 0.022 | 0.029 | 0.032 | 0.045 |
| | | | | 142 - 178 | $v_f$ (mm/min) | 275 | 275 | 275 | 275 | 275 | 275 | 275 | 275 |
| | E 3 - 4 | 1.0 | 0.20 | 140 | n (rev/min) | 33950 | 16980 | 8490 | 5090 | 4240 | 3180 | 2830 | 2040 |
| | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.011 | 0.018 | 0.022 | 0.029 | 0.032 | 0.045 |
| | | | | 122 - 158 | $v_f$ (mm/min) | 275 | 275 | 275 | 275 | 275 | 275 | 275 | 275 |
| | E 5 - 6 | 1.0 | 0.20 | 101 | n (rev/min) | 21430 | 10720 | 5360 | 3210 | 2680 | 2010 | 1790 | 1290 |
| | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.011 | 0.018 | 0.022 | 0.029 | 0.032 | 0.045 |
| | | | | 82 - 119 | $v_f$ (mm/min) | 174 | 174 | 174 | 173 | 174 | 174 | 174 | 174 |
| M | E 8 - 9 | 1.0 | 0.20 | 85 | n (rev/min) | 18040 | 9020 | 4510 | 2710 | 2250 | 1690 | 1500 | 1080 |
| | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.010 | 0.017 | 0.020 | 0.027 | 0.030 | 0.042 |
| | | | | 76 - 94 | $v_f$ (mm/min) | 136 | 136 | 136 | 137 | 136 | 136 | 136 | 136 |
| | E 10 - 11 | 1.0 | 0.20 | 76 | n (rev/min) | 16130 | 8060 | 4030 | 2420 | 2020 | 1510 | 1340 | 970 |
| | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.010 | 0.017 | 0.020 | 0.027 | 0.030 | 0.042 |
| | | | | 27 - 46 | $v_f$ (mm/min) | 122 | 122 | 122 | 122 | 122 | 122 | 122 | 122 |
| K | E 12 - 13 | 1.0 | 0.20 | 104 | n (rev/min) | 22070 | 11030 | 5520 | 3310 | 2760 | 2070 | 1840 | 1320 |
| | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.011 | 0.018 | 0.022 | 0.029 | 0.032 | 0.045 |
| | | | | 85 - 122 | $v_f$ (mm/min) | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 178 |
| | E 14 - 15 | 1.0 | 0.20 | 134 | n (rev/min) | 28440 | 14220 | 7110 | 4270 | 3550 | 2670 | 2370 | 1710 |
| | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.011 | 0.018 | 0.022 | 0.029 | 0.032 | 0.045 |
| | | | | 116 - 152 | $v_f$ (mm/min) | 230 | 230 | 230 | 231 | 230 | 231 | 230 | 231 |
| S | E 19 | 0.5 | 0.20 | 37 | n (rev/min) | 7850 | 3930 | 1960 | 1180 | 980 | 740 | 650 | 470 |
| | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.011 | 0.018 | 0.022 | 0.029 | 0.032 | 0.045 |
| | | | | 27 - 46 | $v_f$ (mm/min) | 64 | 64 | 64 | 64 | 64 | 64 | 63 | 63 |
| | E 20 | 0.5 | 0.20 | 37 | n (rev/min) | 7850 | 3930 | 1960 | 1180 | 980 | 740 | 650 | 470 |
| | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.011 | 0.018 | 0.022 | 0.029 | 0.032 | 0.045 |
| | | | | 27 - 46 | $v_f$ (mm/min) | 64 | 64 | 64 | 64 | 64 | 64 | 63 | 63 |
| | E 21 | 0.5 | 0.20 | 24 | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 420 | 310 |
| | | | | | $f_z$ (mm) | 0.002 | 0.005 | 0.009 | 0.015 | 0.018 | 0.024 | 0.027 | 0.038 |
| | | | | 15 - 34 | $v_f$ (mm/min) | 34 | 34 | 34 | 34 | 35 | 35 | 34 | 35 |
| | E 22 | 0.5 | 0.20 | 67 | n (rev/min) | 14220 | 7110 | 3550 | 2130 | 1780 | 1330 | 1180 | 850 |
| | | | | | $f_z$ (mm) | 0.003 | 0.007 | 0.014 | 0.023 | 0.027 | 0.036 | 0.041 | 0.057 |
| | | | | 49 - 85 | $v_f$ (mm/min) | 146 | 146 | 146 | 146 | 146 | 146 | 145 | 145 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

S545M

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 5$ 4 | 6 | 8 | 10 | 12 | 14 | 16 | 20 | 25 |
| P | E 1 - 2 | 1.0 | 0.25 | 150 | n (rev/min) | 11940 | 7960 | 5970 | 4770 | 3980 | 3410 | 2980 | 2390 | 1910 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 120 - 210 | $v_f$ (mm/min) | 1075 | 1075 | 1075 | 1075 | 1075 | 1075 | 1075 | 1075 | 1075 |
| | E 3 - 4 | 1.0 | 0.25 | 120 | n (rev/min) | 9550 | 6370 | 4770 | 3820 | 3180 | 2730 | 2390 | 1910 | 1530 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 100 - 210 | $v_f$ (mm/min) | 860 | 860 | 860 | 860 | 860 | 860 | 860 | 860 | 860 |
| | E 5 - 6 | 1.0 | 0.20 | 90 | n (rev/min) | 7160 | 4770 | 3580 | 2860 | 2390 | 2050 | 1790 | 1430 | 1150 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 60 - 120 | $v_f$ (mm/min) | 645 | 645 | 645 | 645 | 645 | 645 | 645 | 645 | 645 |
| H | M / A / D 7a (48>52HRc) | 1.0 | 0.10 | 50 | n (rev/min) | 3980 | 2650 | 1990 | 1590 | 1330 | 1140 | 990 | 800 | 640 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 20 - 60 | $v_f$ (mm/min) | 360 | 360 | 360 | 360 | 360 | 360 | 355 | 360 | 360 |
| M | E 8 - 9 | 1.0 | 0.20 | 80 | n (rev/min) | 6370 | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1270 | 1020 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 50 - 110 | $v_f$ (mm/min) | 575 | 570 | 570 | 575 | 570 | 575 | 570 | 570 | 575 |
| | E 10 - 11 | 1.0 | 0.20 | 60 | n (rev/min) | 4770 | 3180 | 2390 | 1910 | 1590 | 1360 | 1190 | 950 | 760 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 50 - 110 | $v_f$ (mm/min) | 430 | 430 | 430 | 430 | 430 | 430 | 430 | 430 | 430 |
| K | E 12 - 13 | 1.0 | 0.25 | 90 | n (rev/min) | 7160 | 4770 | 3580 | 2860 | 2390 | 2050 | 1790 | 1430 | 1150 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 80 - 110 | $v_f$ (mm/min) | 645 | 645 | 645 | 645 | 645 | 645 | 645 | 645 | 645 |
| | E 12 - 13 | 1.0 | 0.25 | 50 | n (rev/min) | 3980 | 2650 | 1990 | 1590 | 1330 | 1140 | 990 | 800 | 640 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 50 - 70 | $v_f$ (mm/min) | 360 | 360 | 360 | 360 | 360 | 360 | 355 | 360 | 360 |
| N | E / M / A 16 | 2.0 | 0.05 | 240 | n (rev/min) | 19100 | 12730 | 9550 | 7640 | 6370 | 5460 | 4770 | 3820 | 3060 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 200 - 400 | $v_f$ (mm/min) | 1720 | 1720 | 1720 | 1720 | 1720 | 1720 | 1715 | 1720 | 1720 |
| | E / M / A 17 | 2.0 | 0.05 | 240 | n (rev/min) | 19100 | 12730 | 9550 | 7640 | 6370 | 5460 | 4770 | 3820 | 3060 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 200 - 400 | $v_f$ (mm/min) | 1720 | 1720 | 1720 | 1720 | 1720 | 1720 | 1715 | 1720 | 1720 |
| S | E 19 | 1.0 | 0.05 | 30 | n (rev/min) | 2390 | 1590 | 1190 | 950 | 800 | 680 | 600 | 480 | 380 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 20 - 40 | $v_f$ (mm/min) | 215 | 215 | 215 | 215 | 215 | 215 | 215 | 215 | 215 |
| | E 20 | 1.0 | 0.05 | 30 | n (rev/min) | 2390 | 1590 | 1190 | 950 | 800 | 680 | 600 | 480 | 380 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 20 - 40 | $v_f$ (mm/min) | 215 | 215 | 215 | 215 | 215 | 215 | 215 | 215 | 215 |
| | E 21 | 1.0 | 0.05 | 30 | n (rev/min) | 2390 | 1590 | 1190 | 950 | 800 | 680 | 600 | 480 | 380 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 20 - 40 | $v_f$ (mm/min) | 215 | 215 | 215 | 215 | 215 | 215 | 215 | 215 | 215 |
| | E 22 | 1.0 | 0.15 | 40 | n (rev/min) | 3180 | 2120 | 1590 | 1270 | 1060 | 910 | 800 | 640 | 510 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 30 - 50 | $v_f$ (mm/min) | 285 | 285 | 285 | 285 | 285 | 285 | 290 | 290 | 285 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

S645M

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 6$ | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 20 | 25 |
| P | E 1 - 2 | 1.0 | 0.25 | 150 | | n (rev/min) | 11940 | 7960 | 5970 | 4770 | 3980 | 3410 | 2980 | 2390 | 1910 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 120 | - 210 | $v_f$ (mm/min) | 1290 | 1290 | 1290 | 1290 | 1290 | 1290 | 1285 | 1290 | 1290 |
| | E 3 - 4 | 1.0 | 0.25 | 120 | | n (rev/min) | 9550 | 6370 | 4770 | 3820 | 3180 | 2730 | 2390 | 1910 | 1530 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 100 | - 210 | $v_f$ (mm/min) | 1030 | 1030 | 1030 | 1030 | 1030 | 1030 | 1030 | 1030 | 1035 |
| | E 5 - 6 | 1.0 | 0.20 | 90 | | n (rev/min) | 7160 | 4770 | 3580 | 2860 | 2390 | 2050 | 1790 | 1430 | 1150 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 60 | - 120 | $v_f$ (mm/min) | 775 | 775 | 775 | 770 | 775 | 775 | 775 | 770 | 775 |
| H | M / A / D 7a (48>52HRc) | 1.0 | 0.10 | 50 | | n (rev/min) | 3980 | 2650 | 1990 | 1590 | 1330 | 1140 | 990 | 800 | 640 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 20 | - 60 | $v_f$ (mm/min) | 430 | 430 | 430 | 430 | 430 | 430 | 430 | 430 | 430 |
| M | E 8 - 9 | 1.0 | 0.20 | 80 | | n (rev/min) | 6370 | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1270 | 1020 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 50 | - 110 | $v_f$ (mm/min) | 690 | 685 | 685 | 690 | 685 | 690 | 685 | 685 | 690 |
| | E 10 - 11 | 1.0 | 0.20 | 60 | | n (rev/min) | 4770 | 3180 | 2390 | 1910 | 1590 | 1360 | 1190 | 950 | 760 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 50 | - 110 | $v_f$ (mm/min) | 515 | 515 | 515 | 515 | 515 | 515 | 515 | 515 | 515 |
| K | E 12 - 13 | 1.0 | 0.25 | 90 | | n (rev/min) | 7160 | 4770 | 3580 | 2860 | 2390 | 2050 | 1790 | 1430 | 1150 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 80 | - 110 | $v_f$ (mm/min) | 775 | 775 | 775 | 770 | 775 | 775 | 775 | 770 | 775 |
| | E 14 - 15 | 1.0 | 0.25 | 50 | | n (rev/min) | 3980 | 2650 | 1990 | 1590 | 1330 | 1140 | 990 | 800 | 640 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 50 | - 70 | $v_f$ (mm/min) | 430 | 430 | 430 | 430 | 430 | 430 | 430 | 430 | 430 |
| N | E / M / A 16 | 2.0 | 0.05 | 240 | | n (rev/min) | 19100 | 12730 | 9550 | 7640 | 6370 | 5460 | 4770 | 3820 | 3060 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 200 | - 400 | $v_f$ (mm/min) | 2065 | 2060 | 2065 | 2065 | 2065 | 2065 | 2060 | 2065 | 2065 |
| | E / M / A 17 | 2.0 | 0.05 | 240 | | n (rev/min) | 19100 | 12730 | 9550 | 7640 | 6370 | 5460 | 4770 | 3820 | 3060 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 200 | - 400 | $v_f$ (mm/min) | 2065 | 2060 | 2065 | 2065 | 2065 | 2065 | 2060 | 2065 | 2065 |
| S | E 19 | 1.0 | 0.05 | 30 | | n (rev/min) | 2390 | 1590 | 1190 | 950 | 800 | 680 | 600 | 480 | 380 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 20 | - 40 | $v_f$ (mm/min) | 260 | 260 | 255 | 255 | 260 | 255 | 260 | 260 | 255 |
| | E 20 | 1.0 | 0.05 | 30 | | n (rev/min) | 2390 | 1590 | 1190 | 950 | 800 | 680 | 600 | 480 | 380 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 20 | - 40 | $v_f$ (mm/min) | 260 | 260 | 255 | 255 | 260 | 255 | 260 | 260 | 255 |
| | E 21 | 1.0 | 0.05 | 30 | | n (rev/min) | 2390 | 1590 | 1190 | 950 | 800 | 680 | 600 | 480 | 380 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 20 | - 40 | $v_f$ (mm/min) | 260 | 260 | 255 | 255 | 260 | 255 | 260 | 260 | 255 |
| | E 22 | 1.0 | 0.15 | 40 | | n (rev/min) | 3180 | 2120 | 1590 | 1270 | 1060 | 910 | 800 | 640 | 510 |
| | | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.090 | 0.113 |
| | | | | 30 | - 50 | $v_f$ (mm/min) | 345 | 345 | 345 | 345 | 345 | 345 | 345 | 345 | 345 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

SR420M

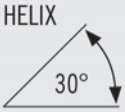
| SLOTTING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 4$ | 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 1.00 | 1.00 | 90 | | n (rev/min) | 4770 | 2860 | 2390 | 1790 | 1430 | 1150 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 60 - 120 | | $v_f$ (mm/min) | 357 | 357 | 358 | 357 | 357 | 359 |
| | E 3 - 4 | 1.00 | 1.00 | 80 | | n (rev/min) | 4240 | 2550 | 2120 | 1590 | 1270 | 1020 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 70 - 80 | | $v_f$ (mm/min) | 317 | 318 | 317 | 317 | 317 | 318 |
| | E 5 - 6 | 1.00 | 1.00 | 50 | | n (rev/min) | 2650 | 1590 | 1330 | 990 | 800 | 640 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 50 - 60 | | $v_f$ (mm/min) | 198 | 198 | 199 | 198 | 200 | 200 |
| M | E 8 - 9 | 0.50 | 1.00 | 120 | | n (rev/min) | 6370 | 3820 | 3180 | 2390 | 1910 | 1530 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 100 - 130 | | $v_f$ (mm/min) | 477 | 477 | 476 | 477 | 477 | 477 |
| | E 10 - 11 | 0.30 | 1.00 | 60 | | n (rev/min) | 3180 | 1910 | 1590 | 1190 | 950 | 760 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 50 - 80 | | $v_f$ (mm/min) | 238 | 238 | 238 | 238 | 237 | 237 |
| K | E 12 - 13 | 1.00 | 1.00 | 120 | | n (rev/min) | 6370 | 3820 | 3180 | 2390 | 1910 | 1530 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 100 - 130 | | $v_f$ (mm/min) | 477 | 477 | 476 | 477 | 477 | 477 |
| | E 14 - 15 | 0.30 | 1.00 | 50 | | n (rev/min) | 2650 | 1590 | 1330 | 990 | 800 | 640 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 30 - 60 | | $v_f$ (mm/min) | 198 | 198 | 199 | 198 | 200 | 200 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.00 | 0.40 | 90 | | n (rev/min) | 4770 | 2860 | 2390 | 1790 | 1430 | 1150 |
| | | | | | | $f_z$ (mm) | 0.0187 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 70 - 110 | | $v_f$ (mm/min) | 357 | 357 | 358 | 357 | 357 | 359 |
| | E 3 - 4 | 1.00 | 0.40 | 80 | | n (rev/min) | 4240 | 2550 | 2120 | 1590 | 1270 | 1020 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 60 - 90 | | $v_f$ (mm/min) | 317 | 318 | 317 | 317 | 317 | 318 |
| | E 5 - 6 | 1.00 | 0.40 | 50 | | n (rev/min) | 2650 | 1590 | 1330 | 990 | 800 | 640 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 40 - 70 | | $v_f$ (mm/min) | 198 | 198 | 199 | 198 | 200 | 200 |
| M | E 8 - 9 | 1.00 | 0.40 | 120 | | n (rev/min) | 6370 | 46 | 38 | 29 | 23 | 18 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.027 | 0.032 | 0.043 | 0.054 | 0.068 |
| | | | | 110 - 120 | | $v_f$ (mm/min) | 477 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| | E 10 - 11 | 1.00 | 0.30 | 60 | | n (rev/min) | 3180 | 1910 | 1590 | 1190 | 950 | 760 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 50 - 70 | | $v_f$ (mm/min) | 238 | 238 | 238 | 238 | 237 | 237 |
| K | E 12 - 13 | 1.00 | 0.40 | 120 | | n (rev/min) | 6370 | 3820 | 3180 | 2390 | 1910 | 1530 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 100 - 130 | | $v_f$ (mm/min) | 477 | 477 | 476 | 477 | 477 | 477 |
| | E 14 - 15 | 1.00 | 0.30 | 50 | | n (rev/min) | 2650 | 1590 | 1330 | 990 | 800 | 640 |
| | | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.037 | 0.050 | 0.062 | 0.078 |
| | | | | 30 - 60 | | $v_f$ (mm/min) | 198 | 198 | 199 | 198 | 200 | 200 |

# GENERAL PURPOSE- C230

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- General Purpose

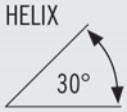
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85261 | C230-0.031-F3-S.0-Z2 | 1/32 | 1/8 | 5/64 | 1-1/2 | 2 | |
| N85337 | C230-0.031-F3-S.0-Z2 | 1/32 | 1/8 | 5/64 | 1-1/2 | 2 | TiAlN |
| N54012 | C230-0.031-F4-S.0-Z2 | 1/32 | 1/8 | 3/32 | 1-1/2 | 2 | |
| N54018 | C230-0.031-F4-S.0-Z2 | 1/32 | 1/8 | 3/32 | 1-1/2 | 2 | TiAlN |
| N85262 | C230-0.047-F2-S.0-Z2 | 3/64 | 1/8 | 7/64 | 1-1/2 | 2 | |
| N85338 | C230-0.047-F2-S.0-Z2 | 3/64 | 1/8 | 7/64 | 1-1/2 | 2 | TiAlN |
| N54013 | C230-0.047-F3-S.0-Z2 | 3/64 | 1/8 | 1/8 | 1-1/2 | 2 | |
| N54019 | C230-0.047-F3-S.0-Z2 | 3/64 | 1/8 | 1/8 | 1-1/2 | 2 | TiAlN |
| N85408 | C230-0.063-F2-S.0-Z2 | 1/16 | 1/8 | 1/8 | 1-1/2 | 2 | |
| N85434 | C230-0.063-F2-S.0-Z2 | 1/16 | 1/8 | 1/8 | 1-1/2 | 2 | TiAlN |
| N85263 | C230-0.063-F3-S.0-Z2 | 1/16 | 1/8 | 3/16 | 1-1/2 | 2 | |
| N85339 | C230-0.063-F3-S.0-Z2 | 1/16 | 1/8 | 3/16 | 1-1/2 | 2 | TiAlN |
| N55334 | C230-0.063-F4-S.0-Z2 | 1/16 | 1/8 | 1/4 | 1-1/2 | 2 | |
| N55430 | C230-0.063-F4-S.0-Z2 | 1/16 | 1/8 | 1/4 | 1-1/2 | 2 | TiAlN |
| N85264 | C230-0.078-F2-S.0-Z2 | 5/64 | 1/8 | 3/16 | 1-1/2 | 2 | |
| N85340 | C230-0.078-F2-S.0-Z2 | 5/64 | 1/8 | 3/16 | 1-1/2 | 2 | TiAlN |
| N55335 | C230-0.078-F3-S.0-Z2 | 5/64 | 1/8 | 1/4 | 1-1/2 | 2 | |
| N55431 | C230-0.078-F3-S.0-Z2 | 5/64 | 1/8 | 1/4 | 1-1/2 | 2 | TiAlN |
| N85409 | C230-0.094-F2-S.0-Z2 | 3/32 | 1/8 | 3/16 | 1-1/2 | 2 | |
| N85435 | C230-0.094-F2-S.0-Z2 | 3/32 | 1/8 | 3/16 | 1-1/2 | 2 | TiAlN |
| N85265 | C230-0.094-F3-S.0-Z2 | 3/32 | 1/8 | 9/32 | 1-1/2 | 2 | |
| N85341 | C230-0.094-F3-S.0-Z2 | 3/32 | 1/8 | 9/32 | 1-1/2 | 2 | TiAlN |
| N55336 | C230-0.094-F4-S.0-Z2 | 3/32 | 1/8 | 3/8 | 1-1/2 | 2 | |
| N55432 | C230-0.094-F4-S.0-Z2 | 3/32 | 1/8 | 3/8 | 1-1/2 | 2 | TiAlN |
| N85266 | C230-0.109-F3-S.0-Z2 | 7/64 | 1/8 | 3/8 | 1-1/2 | 2 | |
| N85342 | C230-0.109-F3-S.0-Z2 | 7/64 | 1/8 | 3/8 | 1-1/2 | 2 | TiAlN |
| N85410 | C230-0.125-D2-S.0-Z2 | 1/8 | 1/8 | 1/4 | 1-1/2 | 2 | |
| N85436 | C230-0.125-D2-S.0-Z2 | 1/8 | 1/8 | 1/4 | 1-1/2 | 2 | TiAlN |
| N85267 | C230-0.125-D4-S.0-Z2 | 1/8 | 1/8 | 1/2 | 1-1/2 | 2 | |
| N85343 | C230-0.125-D4-S.0-Z2 | 1/8 | 1/8 | 1/2 | 1-1/2 | 2 | TiAlN |
| N55337 | C230-0.125-D5-S.0-Z2 | 1/8 | 1/8 | 5/8 | 2 | 2 | |
| N55433 | C230-0.125-D5-S.0-Z2 | 1/8 | 1/8 | 5/8 | 2 | 2 | TiAlN |
| N55338 | C230-0.125-D6-S.0-Z2 | 1/8 | 1/8 | 3/4 | 3 | 2 | |
| N55434 | C230-0.125-D6-S.0-Z2 | 1/8 | 1/8 | 3/4 | 3 | 2 | TiAlN |
| N55339 | C230-0.125-D8-S.0-Z2 | 1/8 | 1/8 | 1 | 3 | 2 | |
| N55435 | C230-0.125-D8-S.0-Z2 | 1/8 | 1/8 | 1 | 3 | 2 | TiAlN |

DISCOUNT CODE D42

# GENERAL PURPOSE- C230

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- General Purpose

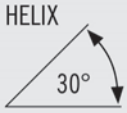
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85411 | C230-0.156-F2-S.0-Z2 | 5/32 | 3/16 | 5/16 | 2 | 2 | |
| N85437 | C230-0.156-F2-S.0-Z2 | 5/32 | 3/16 | 5/16 | 2 | 2 | TiAlN |
| N85269 | C230-0.156-F3-S.0-Z2 | 5/32 | 3/16 | 1/2 | 2 | 2 | |
| N85345 | C230-0.156-F3-S.0-Z2 | 5/32 | 3/16 | 1/2 | 2 | 2 | TiAlN |
| N85412 | C230-0.188-D2-S.0-Z2 | 3/16 | 3/16 | 3/8 | 2 | 2 | |
| N85438 | C230-0.188-D2-S.0-Z2 | 3/16 | 3/16 | 3/8 | 2 | 2 | TiAlN |
| N85271 | C230-0.188-D3-S.0-Z2 | 3/16 | 3/16 | 5/8 | 2 | 2 | |
| N85347 | C230-0.188-D3-S.0-Z2 | 3/16 | 3/16 | 5/8 | 2 | 2 | TiAlN |
| N85448 | C230-0.188-D4-S.0-Z2 | 3/16 | 3/16 | 3/4 | 2-1/2 | 2 | |
| N85484 | C230-0.188-D4-S.0-Z2 | 3/16 | 3/16 | 3/4 | 2-1/2 | 2 | TiAlN |
| N55341 | C230-0.188-D6-S.0-Z2 | 3/16 | 3/16 | 1 | 4 | 2 | |
| N55437 | C230-0.188-D6-S.0-Z2 | 3/16 | 3/16 | 1 | 4 | 2 | TiAlN |
| N85449 | C230-0.188-D7-S.0-Z2 | 3/16 | 3/16 | 1-1/8 | 3 | 2 | |
| N85485 | C230-0.188-D7-S.0-Z2 | 3/16 | 3/16 | 1-1/8 | 3 | 2 | TiAlN |
| N85272 | C230-0.203-F3-S.0-Z2 | 13/64 | 1/4 | 5/8 | 2-1/2 | 2 | |
| N85348 | C230-0.203-F3-S.0-Z2 | 13/64 | 1/4 | 5/8 | 2-1/2 | 2 | TiAlN |
| N85413 | C230-0.219-F2-S.0-Z2 | 7/32 | 1/4 | 7/16 | 2 | 2 | |
| N85439 | C230-0.219-F2-S.0-Z2 | 7/32 | 1/4 | 7/16 | 2 | 2 | TiAlN |
| N85273 | C230-0.219-F3-S.0-Z2 | 7/32 | 1/4 | 5/8 | 2-1/2 | 2 | |
| N85349 | C230-0.219-F3-S.0-Z2 | 7/32 | 1/4 | 5/8 | 2-1/2 | 2 | TiAlN |
| N85274 | C230-0.234-F3-S.0-Z2 | 15/64 | 1/4 | 3/4 | 2-1/2 | 2 | |
| N85350 | C230-0.234-F3-S.0-Z2 | 15/64 | 1/4 | 3/4 | 2-1/2 | 2 | TiAlN |
| N85414 | C230-0.250-D2-S.0-Z2 | 1/4 | 1/4 | 1/2 | 2 | 2 | |
| N85440 | C230-0.250-D2-S.0-Z2 | 1/4 | 1/4 | 1/2 | 2 | 2 | TiAlN |
| N85275 | C230-0.250-D3-S.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | |
| N85351 | C230-0.250-D3-S.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | TiAlN |
| N55342 | C230-0.250-D4-S.0-Z2 | 1/4 | 1/4 | 1 | 3 | 2 | |
| N55438 | C230-0.250-D4-S.0-Z2 | 1/4 | 1/4 | 1 | 3 | 2 | TiAlN |
| N55343 | C230-0.250-D5-S.0-Z2 | 1/4 | 1/4 | 1 | 4 | 2 | |
| N55439 | C230-0.250-D5-S.0-Z2 | 1/4 | 1/4 | 1 | 4 | 2 | TiAlN |
| N85450 | C230-0.250-D6-S.0-Z2 | 1/4 | 1/4 | 1-1/8 | 3 | 2 | |
| N85486 | C230-0.250-D6-S.0-Z2 | 1/4 | 1/4 | 1-1/8 | 3 | 2 | TiAlN |
| N85451 | C230-0.250-D7-S.0-Z2 | 1/4 | 1/4 | 1-1/2 | 4 | 2 | |
| N85487 | C230-0.250-D7-S.0-Z2 | 1/4 | 1/4 | 1-1/2 | 4 | 2 | TiAlN |
| N55344 | C230-0.250-D8-S.0-Z2 | 1/4 | 1/4 | 1-1/2 | 6 | 2 | |
| N55440 | C230-0.250-D8-S.0-Z2 | 1/4 | 1/4 | 1-1/2 | 6 | 2 | TiAlN |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- C230

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- General Purpose

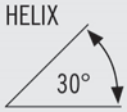
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85276 | C230-0.266-F3-S.0-Z2 | 17/64 | 5/16 | 3/4 | 2-1/2 | 2 | |
| N85352 | C230-0.266-F3-S.0-Z2 | 17/64 | 5/16 | 3/4 | 2-1/2 | 2 | TiAlN |
| N85277 | C230-0.281-F3-S.0-Z2 | 9/32 | 5/16 | 3/4 | 2-1/2 | 2 | |
| N85353 | C230-0.281-F3-S.0-Z2 | 9/32 | 5/16 | 3/4 | 2-1/2 | 2 | TiAlN |
| N85415 | C230-0.313-D2-S.0-Z2 | 5/16 | 5/16 | 1/2 | 2 | 2 | |
| N85441 | C230-0.313-D2-S.0-Z2 | 5/16 | 5/16 | 1/2 | 2 | 2 | TiAlN |
| N85279 | C230-0.313-D3-S.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | |
| N85355 | C230-0.313-D3-S.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | TiAlN |
| N55345 | C230-0.313-D4-S.0-Z2 | 5/16 | 5/16 | 1 | 3 | 2 | |
| N55441 | C230-0.313-D4-S.0-Z2 | 5/16 | 5/16 | 1 | 3 | 2 | TiAlN |
| N55346 | C230-0.313-D5-S.0-Z2 | 5/16 | 5/16 | 1 | 4 | 2 | |
| N55442 | C230-0.313-D5-S.0-Z2 | 5/16 | 5/16 | 1 | 4 | 2 | TiAlN |
| N55347 | C230-0.313-D7-S.0-Z2 | 5/16 | 5/16 | 1-1/2 | 6 | 2 | |
| N55443 | C230-0.313-D7-S.0-Z2 | 5/16 | 5/16 | 1-1/2 | 6 | 2 | TiAlN |
| N85453 | C230-0.313-D8-S.0-Z2 | 5/16 | 5/16 | 1-5/8 | 4 | 2 | |
| N85489 | C230-0.313-D8-S.0-Z2 | 5/16 | 5/16 | 1-5/8 | 4 | 2 | TiAlN |
| N85280 | C230-0.328-F3-S.0-Z2 | 21/64 | 3/8 | 1 | 2-1/2 | 2 | |
| N85356 | C230-0.328-F3-S.0-Z2 | 21/64 | 3/8 | 1 | 2-1/2 | 2 | TiAlN |
| N85281 | C230-0.344-F3-S.0-Z2 | 11/32 | 3/8 | 1 | 2-1/2 | 2 | |
| N85357 | C230-0.344-F3-S.0-Z2 | 11/32 | 3/8 | 1 | 2-1/2 | 2 | TiAlN |
| N85416 | C230-0.375-D1-S.0-Z2 | 3/8 | 3/8 | 5/8 | 2 | 2 | |
| N85442 | C230-0.375-D1-S.0-Z2 | 3/8 | 3/8 | 5/8 | 2 | 2 | TiAlN |
| N85283 | C230-0.375-D2-S.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | |
| N85359 | C230-0.375-D2-S.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | TiAlN |
| N55348 | C230-0.375-D3-S.0-Z2 | 3/8 | 3/8 | 1 | 3 | 2 | |
| N55444 | C230-0.375-D3-S.0-Z2 | 3/8 | 3/8 | 1 | 3 | 2 | TiAlN |
| N55349 | C230-0.375-D4-S.0-Z2 | 3/8 | 3/8 | 1 | 4 | 2 | |
| N55445 | C230-0.375-D4-S.0-Z2 | 3/8 | 3/8 | 1 | 4 | 2 | TiAlN |
| N85454 | C230-0.375-D5-S.0-Z2 | 3/8 | 3/8 | 1-1/8 | 3 | 2 | |
| N85490 | C230-0.375-D5-S.0-Z2 | 3/8 | 3/8 | 1-1/8 | 3 | 2 | TiAlN |
| N55350 | C230-0.375-D6-S.0-Z2 | 3/8 | 3/8 | 1-1/2 | 6 | 2 | |
| N55446 | C230-0.375-D6-S.0-Z2 | 3/8 | 3/8 | 1-1/2 | 6 | 2 | TiAlN |
| N85455 | C230-0.375-D7-S.0-Z2 | 3/8 | 3/8 | 1-3/4 | 4 | 2 | |
| N85491 | C230-0.375-D7-S.0-Z2 | 3/8 | 3/8 | 1-3/4 | 4 | 2 | TiAlN |
| N55351 | C230-0.375-D8-S.0-Z2 | 3/8 | 3/8 | 2 | 4 | 2 | |
| N55447 | C230-0.375-D8-S.0-Z2 | 3/8 | 3/8 | 2 | 4 | 2 | TiAlN |

DISCOUNT CODE D42

# GENERAL PURPOSE- C230

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- General Purpose

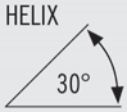
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N55352 | C230-0.375-D9-S.0-Z2 | 3/8 | 3/8 | 3 | 6 | 2 | |
| N55448 | C230-0.375-D9-S.0-Z2 | 3/8 | 3/8 | 3 | 6 | 2 | TiAlN |
| N85287 | C230-0.438-D2-S.0-Z2 | 7/16 | 7/16 | 1 | 2-3/4 | 2 | |
| N85363 | C230-0.438-D2-S.0-Z2 | 7/16 | 7/16 | 1 | 2-3/4 | 2 | TiAlN |
| N55354 | C230-0.438-D4-S.0-Z2 | 7/16 | 7/16 | 1-1/2 | 6 | 2 | |
| N55450 | C230-0.438-D4-S.0-Z2 | 7/16 | 7/16 | 1-1/2 | 6 | 2 | TiAlN |
| N55355 | C230-0.438-D5-S.0-Z2 | 7/16 | 7/16 | 2 | 4 | 2 | |
| N55451 | C230-0.438-D5-S.0-Z2 | 7/16 | 7/16 | 2 | 4 | 2 | TiAlN |
| N85457 | C230-0.438-D7-S.0-Z2 | 7/16 | 7/16 | 3 | 6 | 2 | |
| N85493 | C230-0.438-D7-S.0-Z2 | 7/16 | 7/16 | 3 | 6 | 2 | TiAlN |
| N85418 | C230-0.500-D1-S.0-Z2 | 1/2 | 1/2 | 5/8 | 2-1/2 | 2 | |
| N85444 | C230-0.500-D1-S.0-Z2 | 1/2 | 1/2 | 5/8 | 2-1/2 | 2 | TiAlN |
| N85291 | C230-0.500-D2-S.0-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | |
| N85367 | C230-0.500-D2-S.0-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiAlN |
| N55356 | C230-0.500-D3-S.0-Z2 | 1/2 | 1/2 | 1 | 4 | 2 | |
| N55452 | C230-0.500-D3-S.0-Z2 | 1/2 | 1/2 | 1 | 4 | 2 | TiAlN |
| N55357 | C230-0.500-D4-S.0-Z2 | 1/2 | 1/2 | 1-1/2 | 6 | 2 | |
| N55453 | C230-0.500-D4-S.0-Z2 | 1/2 | 1/2 | 1-1/2 | 6 | 2 | TiAlN |
| N55358 | C230-0.500-D5-S.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | |
| N55454 | C230-0.500-D5-S.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiAlN |
| N85458 | C230-0.500-D6-S.0-Z2 | 1/2 | 1/2 | 2 | 4-1/2 | 2 | |
| N85494 | C230-0.500-D6-S.0-Z2 | 1/2 | 1/2 | 2 | 4-1/2 | 2 | TiAlN |
| N85459 | C230-0.500-D7-S.0-Z2 | 1/2 | 1/2 | 3 | 6 | 2 | |
| N85495 | C230-0.500-D7-S.0-Z2 | 1/2 | 1/2 | 3 | 6 | 2 | TiAlN |
| N85292 | C230-0.563-D2-S.0-Z2 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 2 | |
| N85368 | C230-0.563-D2-S.0-Z2 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 2 | TiAlN |
| N55360 | C230-0.563-D5-S.0-Z2 | 9/16 | 9/16 | 3 | 6 | 2 | |
| N55456 | C230-0.563-D5-S.0-Z2 | 9/16 | 9/16 | 3 | 6 | 2 | TiAlN |
| N85419 | C230-0.625-D1-S.0-Z2 | 5/8 | 5/8 | 3/4 | 3 | 2 | |
| N85445 | C230-0.625-D1-S.0-Z2 | 5/8 | 5/8 | 3/4 | 3 | 2 | TiAlN |
| N85293 | C230-0.625-D2-S.0-Z2 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 2 | |
| N85369 | C230-0.625-D2-S.0-Z2 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 2 | TiAlN |
| N55361 | C230-0.625-D3-S.0-Z2 | 5/8 | 5/8 | 2 | 6 | 2 | |
| N55457 | C230-0.625-D3-S.0-Z2 | 5/8 | 5/8 | 2 | 6 | 2 | TiAlN |
| N85460 | C230-0.625-D4-S.0-Z2 | 5/8 | 5/8 | 2-1/4 | 5 | 2 | |
| N85496 | C230-0.625-D4-S.0-Z2 | 5/8 | 5/8 | 2-1/4 | 5 | 2 | TiAlN |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- C230

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

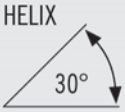
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85461 | C230-0.625-D5-S.0-Z2 | 5/8 | 5/8 | 3 | 6 | 2 | |
| N85497 | C230-0.625-D5-S.0-Z2 | 5/8 | 5/8 | 3 | 6 | 2 | TiAlN |
| N85294 | C230-0.688-F2-S.0-Z2 | 11/16 | 3/4 | 1-3/8 | 4 | 2 | |
| N85370 | C230-0.688-F2-S.0-Z2 | 11/16 | 3/4 | 1-3/8 | 4 | 2 | TiAlN |
| N85420 | C230-0.750-D1-S.0-Z2 | 3/4 | 3/4 | 1 | 3 | 2 | |
| N85446 | C230-0.750-D1-S.0-Z2 | 3/4 | 3/4 | 1 | 3 | 2 | TiAlN |
| N85295 | C230-0.750-D2-S.0-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | |
| N85371 | C230-0.750-D2-S.0-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | TiAlN |
| N55362 | C230-0.750-D3-S.0-Z2 | 3/4 | 3/4 | 2 | 6 | 2 | |
| N55458 | C230-0.750-D3-S.0-Z2 | 3/4 | 3/4 | 2 | 6 | 2 | TiAlN |
| N85462 | C230-0.750-D4-S.0-Z2 | 3/4 | 3/4 | 2-1/4 | 5 | 2 | |
| N85498 | C230-0.750-D4-S.0-Z2 | 3/4 | 3/4 | 2-1/4 | 5 | 2 | TiAlN |
| N85463 | C230-0.750-D5-S.0-Z2 | 3/4 | 3/4 | 3 | 6 | 2 | |
| N85499 | C230-0.750-D5-S.0-Z2 | 3/4 | 3/4 | 3 | 6 | 2 | TiAlN |
| N55363 | C230-0.750-D7-S.0-Z2 | 3/4 | 3/4 | 4 | 7 | 2 | |
| N55459 | C230-0.750-D7-S.0-Z2 | 3/4 | 3/4 | 4 | 7 | 2 | TiAlN |
| N85296 | C230-0.875-D2-S.0-Z2 | 7/8 | 7/8 | 1-1/2 | 4 | 2 | |
| N85372 | C230-0.875-D2-S.0-Z2 | 7/8 | 7/8 | 1-1/2 | 4 | 2 | TiAlN |
| N85297 | C230-1.000-D2-S.0-Z2 | 1 | 1 | 1-1/2 | 4 | 2 | |
| N85373 | C230-1.000-D2-S.0-Z2 | 1 | 1 | 1-1/2 | 4 | 2 | TiAlN |
| N55364 | C230-1.000-D3-S.0-Z2 | 1 | 1 | 2 | 6 | 2 | |
| N55460 | C230-1.000-D3-S.0-Z2 | 1 | 1 | 2 | 6 | 2 | TiAlN |
| N85465 | C230-1.000-D5-S.0-Z2 | 1 | 1 | 3 | 6 | 2 | |
| N85501 | C230-1.000-D5-S.0-Z2 | 1 | 1 | 3 | 6 | 2 | TiAlN |
| N55365 | C230-1.000-D6-S.0-Z2 | 1 | 1 | 4 | 7 | 2 | |
| N55461 | C230-1.000-D6-S.0-Z2 | 1 | 1 | 4 | 7 | 2 | TiAlN |

# GENERAL PURPOSE- C230R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- General Purpose

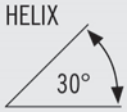
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N91165 | C230R-0.125-D4-R015.0-Z2 | 1/8 | 1/8 | 1/2 | 1-1/2 | 2 | TiAlN | 0.015 |
| N91168 | C230R-0.188-D3-R015.0-Z2 | 3/16 | 3/16 | 5/8 | 2 | 2 | TiAlN | 0.015 |
| N91170 | C230R-0.250-D3-R015.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | TiAlN | 0.015 |
| N91173 | C230R-0.250-D3-R030.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | TiAlN | 0.030 |
| N91175 | C230R-0.313-D3-R015.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | TiAlN | 0.015 |
| N91183 | C230R-0.313-D3-R030.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | TiAlN | 0.030 |
| N91321 | C230R-0.375-D3-R015.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | TiAlN | 0.015 |
| N91323 | C230R-0.375-D3-R030.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | TiAlN | 0.030 |
| N91327 | C230R-0.438-D2-R015.0-Z2 | 7/16 | 7/16 | 1 | 2-3/4 | 2 | TiAlN | 0.015 |
| N91330 | C230R-0.438-D2-R030.0-Z2 | 7/16 | 7/16 | 1 | 2-3/4 | 2 | TiAlN | 0.030 |
| N91332 | C230R-0.438-D2-R060.0-Z2 | 7/16 | 7/16 | 1 | 2-3/4 | 2 | TiAlN | 0.060 |
| N91333 | C230R-0.438-D2-R090.0-Z2 | 7/16 | 7/16 | 1 | 2-3/4 | 2 | TiAlN | 0.090 |
| N91334 | C230R-0.438-D2-R125.0-Z2 | 7/16 | 7/16 | 1 | 2-3/4 | 2 | TiAlN | 0.125 |
| N91335 | C230R-0.500-D2-R015.0-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiAlN | 0.015 |
| N91337 | C230R-0.500-D2-R030.0-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiAlN | 0.030 |
| N91339 | C230R-0.500-D2-R060.0-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiAlN | 0.060 |
| N91341 | C230R-0.500-D2-R090.0-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiAlN | 0.090 |
| N91342 | C230R-0.500-D2-R125.0-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiAlN | 0.125 |
| N91343 | C230R-0.625-D2-R015.0-Z2 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 2 | TiAlN | 0.015 |
| N91345 | C230R-0.625-D2-R030.0-Z2 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 2 | TiAlN | 0.030 |
| N91347 | C230R-0.625-D2-R060.0-Z2 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 2 | TiAlN | 0.060 |
| N91348 | C230R-0.625-D2-R090.0-Z2 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 2 | TiAlN | 0.090 |
| N91349 | C230R-0.625-D2-R125.0-Z2 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 2 | TiAlN | 0.125 |
| N91132 | C230R-0.750-D2-R015.0-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | TiAlN | 0.015 |
| N91352 | C230R-0.750-D2-R030.0-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | TiAlN | 0.030 |
| N91159 | C230R-0.750-D2-R060.0-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | TiAlN | 0.060 |
| N91356 | C230R-0.750-D2-R090.0-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | TiAlN | 0.090 |
| N91358 | C230R-0.750-D2-R125.0-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | TiAlN | 0.125 |
| N91362 | C230R-0.750-D2-R190.0-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | TiAlN | 0.190 |
| N91363 | C230R-1.000-D2-R015.0-Z2 | 1 | 1 | 1-1/2 | 4 | 2 | TiAlN | 0.015 |
| N91365 | C230R-1.000-D2-R030.0-Z2 | 1 | 1 | 1-1/2 | 4 | 2 | TiAlN | 0.030 |
| N91367 | C230R-1.000-D2-R060.0-Z2 | 1 | 1 | 1-1/2 | 4 | 2 | TiAlN | 0.060 |
| N91368 | C230R-1.000-D2-R090.0-Z2 | 1 | 1 | 1-1/2 | 4 | 2 | TiAlN | 0.090 |
| N91369 | C230R-1.000-D2-R125.0-Z2 | 1 | 1 | 1-1/2 | 4 | 2 | TiAlN | 0.125 |
| N91371 | C230R-1.000-D2-R190.0-Z2 | 1 | 1 | 1-1/2 | 4 | 2 | TiAlN | 0.190 |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- CNC230

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

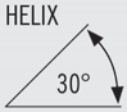
- Weldon flat standard on shank sizes - 3/8", 1/2", 5/8", 3/4" and 1"
- NC Tolerance (see page 388 for details)
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85775 | CNC230-0.125-D4-S.0-Z2 | 1/8 | 1/8 | 1/2 | 1-1/2 | 2 | TiAlN |
| N85776 | CNC230-0.156-F4-S.0-Z2 | 5/32 | 3/16 | 9/16 | 2 | 2 | TiAlN |
| N85777 | CNC230-0.188-D3-S.0-Z2 | 3/16 | 3/16 | 5/8 | 2 | 2 | TiAlN |
| N85779 | CNC230-0.250-D3-S.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | TiAlN |
| N85781 | CNC230-0.313-D3-S.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | TiAlN |
| N85782 | CNC230-0.375-D2-S.3-Z2 | 3/8 | 3/8 | 7/8 | 2-1/2 | 2 | TiAlN |
| N85784 | CNC230-0.500-D2-S.3-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiAlN |
| N85785 | CNC230-0.563-D2-S.0-Z2 | 9/16 | 9/16 | 1-1/4 | 3-1/2 | 2 | TiAlN |
| N85786 | CNC230-0.625-D2-S.3-Z2 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 2 | TiAlN |
| N85787 | CNC230-0.750-D2-S.3-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | TiAlN |
| N85788 | CNC230-1.000-D2-S.3-Z2 | 1 | 1 | 1-1/2 | 4 | 2 | TiAlN |

# GENERAL PURPOSE- CNCB230

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

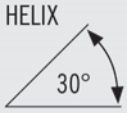
- Weldon flat standard on shank sizes - 3/8", 1/2", 5/8", 3/4" and 1"
- NC Tolerance (see page 388 for details)
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85818 | CNCB230-0.125-D4-B.0-Z2 | 1/8 | 1/8 | 1/2 | 1-1/2 | 2 | TiAlN |
| N85820 | CNCB230-0.188-D3-B.0-Z2 | 3/16 | 3/16 | 5/8 | 2 | 2 | TiAlN |
| N85822 | CNCB230-0.250-D3-B.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | TiAlN |
| N85824 | CNCB230-0.313-D3-B.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | TiAlN |
| N85825 | CNCB230-0.375-D2-B.3-Z2 | 3/8 | 3/8 | 7/8 | 2-1/2 | 2 | TiAlN |
| N85827 | CNCB230-0.500-D2-B.3-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiAlN |
| N85830 | CNCB230-0.750-D2-B.3-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | TiAlN |

# GENERAL PURPOSE- CD230

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

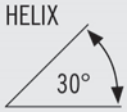
- Weldon flat standard
- General purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85375 | CD230-0.125-XF3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 3-1/16 | 2 | |
| N85397 | CD230-0.125-XF3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 3-1/16 | 2 | TiAlN |
| N85377 | CD230-0.188-XF3-S.3-Z2 | 3/16 | 3/8 | 1/2 | 3-1/4 | 2 | |
| N85399 | CD230-0.188-XF3-S.3-Z2 | 3/16 | 3/8 | 1/2 | 3-1/4 | 2 | TiAlN |
| N85379 | CD230-0.250-XF3-S.3-Z2 | 1/4 | 3/8 | 5/8 | 3-3/8 | 2 | |
| N85401 | CD230-0.250-XF3-S.3-Z2 | 1/4 | 3/8 | 5/8 | 3-3/8 | 2 | TiAlN |
| N85381 | CD230-0.313-XF2-S.3-Z2 | 5/16 | 3/8 | 3/4 | 3-1/2 | 2 | |
| N85403 | CD230-0.313-XF2-S.3-Z2 | 5/16 | 3/8 | 3/4 | 3-1/2 | 2 | TiAlN |
| N85383 | CD230-0.375-XD2-S.3-Z2 | 3/8 | 3/8 | 3/4 | 3-1/2 | 2 | |
| N85405 | CD230-0.375-XD2-S.3-Z2 | 3/8 | 3/8 | 3/4 | 3-1/2 | 2 | TiAlN |
| N85385 | CD230-0.500-XD2-S.3-Z2 | 1/2 | 1/2 | 1 | 4 | 2 | |
| N85407 | CD230-0.500-XD2-S.3-Z2 | 1/2 | 1/2 | 1 | 4 | 2 | TiAlN |

# GENERAL PURPOSE- CSD230

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

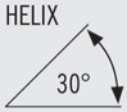
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N89650 | CSD230-0.031-XF2-S.0-Z2 | 1/32 | 1/8 | 1/16 | 1-1/2 | 2 | |
| N89653 | CSD230-0.031-XF2-S.0-Z2 | 1/32 | 1/8 | 1/16 | 1-1/2 | 2 | TiAlN |
| N89654 | CSD230-0.047-XF2-S.0-Z2 | 3/64 | 1/8 | 3/32 | 1-1/2 | 2 | |
| N89657 | CSD230-0.047-XF2-S.0-Z2 | 3/64 | 1/8 | 3/32 | 1-1/2 | 2 | TiAlN |
| N89658 | CSD230-0.063-XF2-S.0-Z2 | 1/16 | 1/8 | 1/8 | 1-1/2 | 2 | |
| N89661 | CSD230-0.063-XF2-S.0-Z2 | 1/16 | 1/8 | 1/8 | 1-1/2 | 2 | TiAlN |
| N89662 | CSD230-0.078-XF2-S.0-Z2 | 5/64 | 1/8 | 1/8 | 1-1/2 | 2 | |
| N89665 | CSD230-0.078-XF2-S.0-Z2 | 5/64 | 1/8 | 1/8 | 1-1/2 | 2 | TiAlN |
| N89666 | CSD230-0.094-XF2-S.0-Z2 | 3/32 | 1/8 | 3/16 | 1-1/2 | 2 | |
| N89669 | CSD230-0.094-XF2-S.0-Z2 | 3/32 | 1/8 | 3/16 | 1-1/2 | 2 | TiAlN |
| N89674 | CSD230-0.125-XD2-S.0-Z2 | 1/8 | 1/8 | 1/4 | 1-1/2 | 2 | |
| N89677 | CSD230-0.125-XD2-S.0-Z2 | 1/8 | 1/8 | 1/4 | 1-1/2 | 2 | TiAlN |
| N89682 | CSD230-0.156-XF2-S.0-Z2 | 5/32 | 3/16 | 5/16 | 2 | 2 | |
| N89685 | CSD230-0.156-XF2-S.0-Z2 | 5/32 | 3/16 | 5/16 | 2 | 2 | TiAlN |
| N89690 | CSD230-0.188-XD2-S.0-Z2 | 3/16 | 3/16 | 3/8 | 2 | 2 | |
| N89693 | CSD230-0.188-XD2-S.0-Z2 | 3/16 | 3/16 | 3/8 | 2 | 2 | TiAlN |
| N89698 | CSD230-0.219-XF2-S.0-Z2 | 7/32 | 1/4 | 1/2 | 2-1/2 | 2 | |
| N89701 | CSD230-0.219-XF2-S.0-Z2 | 7/32 | 1/4 | 1/2 | 2-1/2 | 2 | TiAlN |
| N89706 | CSD230-0.250-XD2-S.0-Z2 | 1/4 | 1/4 | 1/2 | 2-1/2 | 2 | |
| N89709 | CSD230-0.250-XD2-S.0-Z2 | 1/4 | 1/4 | 1/2 | 2-1/2 | 2 | TiAlN |
| N89714 | CSD230-0.313-XD2-S.0-Z2 | 5/16 | 5/16 | 1/2 | 2-1/2 | 2 | |
| N89717 | CSD230-0.313-XD2-S.0-Z2 | 5/16 | 5/16 | 1/2 | 2-1/2 | 2 | TiAlN |
| N89722 | CSD230-0.375-XD2-S.0-Z2 | 3/8 | 3/8 | 9/16 | 2-1/2 | 2 | |
| N89725 | CSD230-0.375-XD2-S.0-Z2 | 3/8 | 3/8 | 9/16 | 2-1/2 | 2 | TiAlN |
| N89730 | CSD230-0.500-XD1-S.0-Z2 | 1/2 | 1/2 | 5/8 | 3 | 2 | |
| N89733 | CSD230-0.500-XD1-S.0-Z2 | 1/2 | 1/2 | 5/8 | 3 | 2 | TiAlN |

# GENERAL PURPOSE- CB230

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- General Purpose

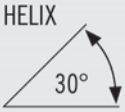
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N86149 | CB230-0.016-F2-B.0-Z2 | 1/64 | 1/8 | 1/32 | 1-1/2 | 2 | |
| N86225 | CB230-0.016-F2-B.0-Z2 | 1/64 | 1/8 | 1/32 | 1-1/2 | 2 | TiAlN |
| N86150 | CB230-0.031-F3-B.0-Z2 | 1/32 | 1/8 | 5/64 | 1-1/2 | 2 | |
| N86226 | CB230-0.031-F3-B.0-Z2 | 1/32 | 1/8 | 5/64 | 1-1/2 | 2 | TiAlN |
| N54020 | CB230-0.031-F4-B.0-Z2 | 1/32 | 1/8 | 3/32 | 1-1/2 | 2 | |
| N54032 | CB230-0.031-F4-B.0-Z2 | 1/32 | 1/8 | 3/32 | 1-1/2 | 2 | TiAlN |
| N86151 | CB230-0.047-F2-B.0-Z2 | 3/64 | 1/8 | 7/64 | 1-1/2 | 2 | |
| N86227 | CB230-0.047-F2-B.0-Z2 | 3/64 | 1/8 | 7/64 | 1-1/2 | 2 | TiAlN |
| N54021 | CB230-0.047-F3-B.0-Z2 | 3/64 | 1/8 | 1/8 | 1-1/2 | 2 | |
| N54033 | CB230-0.047-F3-B.0-Z2 | 3/64 | 1/8 | 1/8 | 1-1/2 | 2 | TiAlN |
| N55462 | CB230-0.063-F2-B.0-Z2 | 1/16 | 1/8 | 1/8 | 1-1/2 | 2 | |
| N55615 | CB230-0.063-F2-B.0-Z2 | 1/16 | 1/8 | 1/8 | 1-1/2 | 2 | TiAlN |
| N86152 | CB230-0.063-F3-B.0-Z2 | 1/16 | 1/8 | 3/16 | 1-1/2 | 2 | |
| N86228 | CB230-0.063-F3-B.0-Z2 | 1/16 | 1/8 | 3/16 | 1-1/2 | 2 | TiAlN |
| N54022 | CB230-0.063-F4-B.0-Z2 | 1/16 | 1/8 | 1/4 | 1-1/2 | 2 | |
| N54034 | CB230-0.063-F4-B.0-Z2 | 1/16 | 1/8 | 1/4 | 1-1/2 | 2 | TiAlN |
| N86153 | CB230-0.078-F2-B.0-Z2 | 5/64 | 1/8 | 3/16 | 1-1/2 | 2 | |
| N86229 | CB230-0.078-F2-B.0-Z2 | 5/64 | 1/8 | 3/16 | 1-1/2 | 2 | TiAlN |
| N54023 | CB230-0.078-F3-B.0-Z2 | 5/64 | 1/8 | 1/4 | 1-1/2 | 2 | |
| N54035 | CB230-0.078-F3-B.0-Z2 | 5/64 | 1/8 | 1/4 | 1-1/2 | 2 | TiAlN |
| N55463 | CB230-0.094-F2-B.0-Z2 | 3/32 | 1/8 | 3/16 | 1-1/2 | 2 | |
| N55616 | CB230-0.094-F2-B.0-Z2 | 3/32 | 1/8 | 3/16 | 1-1/2 | 2 | TiAlN |
| N86154 | CB230-0.094-F3-B.0-Z2 | 3/32 | 1/8 | 9/32 | 1-1/2 | 2 | |
| N86230 | CB230-0.094-F3-B.0-Z2 | 3/32 | 1/8 | 9/32 | 1-1/2 | 2 | TiAlN |
| N55464 | CB230-0.094-F4-B.0-Z2 | 3/32 | 1/8 | 3/8 | 1-1/2 | 2 | |
| N55617 | CB230-0.094-F4-B.0-Z2 | 3/32 | 1/8 | 3/8 | 1-1/2 | 2 | TiAlN |
| N55465 | CB230-0.125-D2-B.0-Z2 | 1/8 | 1/8 | 1/4 | 1-1/2 | 2 | |
| N55618 | CB230-0.125-D2-B.0-Z2 | 1/8 | 1/8 | 1/4 | 1-1/2 | 2 | TiAlN |
| N86156 | CB230-0.125-D4-B.0-Z2 | 1/8 | 1/8 | 1/2 | 1-1/2 | 2 | |
| N86232 | CB230-0.125-D4-B.0-Z2 | 1/8 | 1/8 | 1/2 | 1-1/2 | 2 | TiAlN |
| N55466 | CB230-0.125-D5-B.0-Z2 | 1/8 | 1/8 | 5/8 | 2 | 2 | |
| N55619 | CB230-0.125-D5-B.0-Z2 | 1/8 | 1/8 | 5/8 | 2 | 2 | TiAlN |
| N55467 | CB230-0.125-D6-B.0-Z2 | 1/8 | 1/8 | 3/4 | 3 | 2 | |
| N55620 | CB230-0.125-D6-B.0-Z2 | 1/8 | 1/8 | 3/4 | 3 | 2 | TiAlN |
| N55468 | CB230-0.125-D8-B.0-Z2 | 1/8 | 1/8 | 1 | 3 | 2 | |
| N55621 | CB230-0.125-D8-B.0-Z2 | 1/8 | 1/8 | 1 | 3 | 2 | TiAlN |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- CB230

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

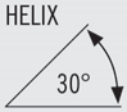
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N55469 | CB230-0.156-F2-B.0-Z2 | 5/32 | 3/16 | 5/16 | 2 | 2 | |
| N55622 | CB230-0.156-F2-B.0-Z2 | 5/32 | 3/16 | 5/16 | 2 | 2 | TiAlN |
| N86158 | CB230-0.156-F3-B.0-Z2 | 5/32 | 3/16 | 1/2 | 2 | 2 | |
| N86234 | CB230-0.156-F3-B.0-Z2 | 5/32 | 3/16 | 1/2 | 2 | 2 | TiAlN |
| N55470 | CB230-0.188-D2-B.0-Z2 | 3/16 | 3/16 | 3/8 | 2 | 2 | |
| N55623 | CB230-0.188-D2-B.0-Z2 | 3/16 | 3/16 | 3/8 | 2 | 2 | TiAlN |
| N86160 | CB230-0.188-D3-B.0-Z2 | 3/16 | 3/16 | 5/8 | 2 | 2 | |
| N86236 | CB230-0.188-D3-B.0-Z2 | 3/16 | 3/16 | 5/8 | 2 | 2 | TiAlN |
| N55471 | CB230-0.188-D4-B.0-Z2 | 3/16 | 3/16 | 1 | 3 | 2 | |
| N55624 | CB230-0.188-D4-B.0-Z2 | 3/16 | 3/16 | 1 | 3 | 2 | TiAlN |
| N55472 | CB230-0.188-D5-B.0-Z2 | 3/16 | 3/16 | 1 | 4 | 2 | |
| N55625 | CB230-0.188-D5-B.0-Z2 | 3/16 | 3/16 | 1 | 4 | 2 | TiAlN |
| N55473 | CB230-0.188-D6-B.0-Z2 | 3/16 | 3/16 | 1-1/8 | 3 | 2 | |
| N55626 | CB230-0.188-D6-B.0-Z2 | 3/16 | 3/16 | 1-1/8 | 3 | 2 | TiAlN |
| N55475 | CB230-0.250-D2-B.0-Z2 | 1/4 | 1/4 | 1/2 | 2 | 2 | |
| N55628 | CB230-0.250-D2-B.0-Z2 | 1/4 | 1/4 | 1/2 | 2 | 2 | TiAlN |
| N86164 | CB230-0.250-D3-B.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | |
| N86240 | CB230-0.250-D3-B.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | TiAlN |
| N55476 | CB230-0.250-D4-B.0-Z2 | 1/4 | 1/4 | 1 | 3 | 2 | |
| N55629 | CB230-0.250-D4-B.0-Z2 | 1/4 | 1/4 | 1 | 3 | 2 | TiAlN |
| N55477 | CB230-0.250-D5-B.0-Z2 | 1/4 | 1/4 | 1 | 4 | 2 | |
| N55630 | CB230-0.250-D5-B.0-Z2 | 1/4 | 1/4 | 1 | 4 | 2 | TiAlN |
| N55478 | CB230-0.250-D6-B.0-Z2 | 1/4 | 1/4 | 1-1/2 | 4 | 2 | |
| N55631 | CB230-0.250-D6-B.0-Z2 | 1/4 | 1/4 | 1-1/2 | 4 | 2 | TiAlN |
| N55479 | CB230-0.250-D7-B.0-Z2 | 1/4 | 1/4 | 1-1/2 | 6 | 2 | |
| N55632 | CB230-0.250-D7-B.0-Z2 | 1/4 | 1/4 | 1-1/2 | 6 | 2 | TiAlN |
| N86166 | CB230-0.281-F3-B.0-Z2 | 9/32 | 5/16 | 3/4 | 2-1/2 | 2 | |
| N86242 | CB230-0.281-F3-B.0-Z2 | 9/32 | 5/16 | 3/4 | 2-1/2 | 2 | TiAlN |
| N55480 | CB230-0.313-D2-B.0-Z2 | 5/16 | 5/16 | 1/2 | 2 | 2 | |
| N55633 | CB230-0.313-D2-B.0-Z2 | 5/16 | 5/16 | 1/2 | 2 | 2 | TiAlN |
| N86168 | CB230-0.313-D3-B.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | |
| N86244 | CB230-0.313-D3-B.0-Z2 | 5/16 | 5/16 | 13/16 | 2-1/2 | 2 | TiAlN |
| N55481 | CB230-0.313-D4-B.0-Z2 | 5/16 | 5/16 | 1 | 3 | 2 | |
| N55634 | CB230-0.313-D4-B.0-Z2 | 5/16 | 5/16 | 1 | 3 | 2 | TiAlN |
| N55482 | CB230-0.313-D5-B.0-Z2 | 5/16 | 5/16 | 1 | 4 | 2 | |
| N55635 | CB230-0.313-D5-B.0-Z2 | 5/16 | 5/16 | 1 | 4 | 2 | TiAlN |

# GENERAL PURPOSE- CB230

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- General Purpose

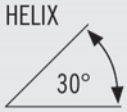
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N55484 | CB230-0.313-D7-B.0-Z2 | 5/16 | 5/16 | 1-5/8 | 4 | 2 | |
| N55637 | CB230-0.313-D7-B.0-Z2 | 5/16 | 5/16 | 1-5/8 | 4 | 2 | TiAlN |
| N55485 | CB230-0.375-D2-B.0-Z2 | 3/8 | 3/8 | 5/8 | 2 | 2 | |
| N55638 | CB230-0.375-D2-B.0-Z2 | 3/8 | 3/8 | 5/8 | 2 | 2 | TiAlN |
| N86172 | CB230-0.375-D3-B.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | |
| N86248 | CB230-0.375-D3-B.0-Z2 | 3/8 | 3/8 | 1 | 2-1/2 | 2 | TiAlN |
| N55486 | CB230-0.375-D4-B.0-Z2 | 3/8 | 3/8 | 1 | 3 | 2 | |
| N55639 | CB230-0.375-D4-B.0-Z2 | 3/8 | 3/8 | 1 | 3 | 2 | TiAlN |
| N55487 | CB230-0.375-D5-B.0-Z2 | 3/8 | 3/8 | 1 | 4 | 2 | |
| N55640 | CB230-0.375-D5-B.0-Z2 | 3/8 | 3/8 | 1 | 4 | 2 | TiAlN |
| N55488 | CB230-0.375-D6-B.0-Z2 | 3/8 | 3/8 | 1-1/2 | 6 | 2 | |
| N55641 | CB230-0.375-D6-B.0-Z2 | 3/8 | 3/8 | 1-1/2 | 6 | 2 | TiAlN |
| N55489 | CB230-0.375-D7-B.0-Z2 | 3/8 | 3/8 | 2 | 4 | 2 | |
| N55642 | CB230-0.375-D7-B.0-Z2 | 3/8 | 3/8 | 2 | 4 | 2 | TiAlN |
| N55492 | CB230-0.438-D3-B.0-Z2 | 7/16 | 7/16 | 1 | 4 | 2 | |
| N55645 | CB230-0.438-D3-B.0-Z2 | 7/16 | 7/16 | 1 | 4 | 2 | TiAlN |
| N55494 | CB230-0.438-D5-B.0-Z2 | 7/16 | 7/16 | 2 | 4 | 2 | |
| N55647 | CB230-0.438-D5-B.0-Z2 | 7/16 | 7/16 | 2 | 4 | 2 | TiAlN |
| N55496 | CB230-0.500-D1-B.0-Z2 | 1/2 | 1/2 | 5/8 | 2-1/2 | 2 | |
| N55649 | CB230-0.500-D1-B.0-Z2 | 1/2 | 1/2 | 5/8 | 2-1/2 | 2 | TiAlN |
| N86180 | CB230-0.500-D2-B.0-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | |
| N86256 | CB230-0.500-D2-B.0-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiAlN |
| N55497 | CB230-0.500-D3-B.0-Z2 | 1/2 | 1/2 | 1 | 4 | 2 | |
| N55650 | CB230-0.500-D3-B.0-Z2 | 1/2 | 1/2 | 1 | 4 | 2 | TiAlN |
| N55498 | CB230-0.500-D4-B.0-Z2 | 1/2 | 1/2 | 1-1/2 | 6 | 2 | |
| N55651 | CB230-0.500-D4-B.0-Z2 | 1/2 | 1/2 | 1-1/2 | 6 | 2 | TiAlN |
| N55499 | CB230-0.500-D5-B.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | |
| N55652 | CB230-0.500-D5-B.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiAlN |
| N55500 | CB230-0.500-D6-B.0-Z2 | 1/2 | 1/2 | 3 | 6 | 2 | |
| N55653 | CB230-0.500-D6-B.0-Z2 | 1/2 | 1/2 | 3 | 6 | 2 | TiAlN |
| N55501 | CB230-0.563-D4-B.0-Z2 | 9/16 | 9/16 | 2 | 6 | 2 | |
| N55654 | CB230-0.563-D4-B.0-Z2 | 9/16 | 9/16 | 2 | 6 | 2 | TiAlN |
| N86182 | CB230-0.625-D2-B.0-Z2 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 2 | |
| N86258 | CB230-0.625-D2-B.0-Z2 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 2 | TiAlN |
| N55504 | CB230-0.625-D3-B.0-Z2 | 5/8 | 5/8 | 2 | 6 | 2 | |
| N55657 | CB230-0.625-D3-B.0-Z2 | 5/8 | 5/8 | 2 | 6 | 2 | TiAlN |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- CB230

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

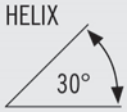
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N55506 | CB230-0.750-D1-B.0-Z2 | 3/4 | 3/4 | 1 | 3 | 2 | |
| N55659 | CB230-0.750-D1-B.0-Z2 | 3/4 | 3/4 | 1 | 3 | 2 | TiAlN |
| N86184 | CB230-0.750-D2-B.0-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | |
| N86260 | CB230-0.750-D2-B.0-Z2 | 3/4 | 3/4 | 1-1/2 | 4 | 2 | TiAlN |
| N55507 | CB230-0.750-D3-B.0-Z2 | 3/4 | 3/4 | 2 | 6 | 2 | |
| N55660 | CB230-0.750-D3-B.0-Z2 | 3/4 | 3/4 | 2 | 6 | 2 | TiAlN |
| N55508 | CB230-0.750-D4-B.0-Z2 | 3/4 | 3/4 | 3 | 6 | 2 | |
| N55661 | CB230-0.750-D4-B.0-Z2 | 3/4 | 3/4 | 3 | 6 | 2 | TiAlN |
| N86185 | CB230-0.875-D2-B.0-Z2 | 7/8 | 7/8 | 1-1/2 | 4 | 2 | |
| N86261 | CB230-0.875-D2-B.0-Z2 | 7/8 | 7/8 | 1-1/2 | 4 | 2 | TiAlN |
| N86186 | CB230-1.000-D1-B.0-Z2 | 1 | 1 | 1-1/2 | 4 | 2 | |
| N86262 | CB230-1.000-D1-B.0-Z2 | 1 | 1 | 1-1/2 | 4 | 2 | TiAlN |
| N55510 | CB230-1.000-D2-B.0-Z2 | 1 | 1 | 2 | 6 | 2 | |
| N55663 | CB230-1.000-D2-B.0-Z2 | 1 | 1 | 2 | 6 | 2 | TiAlN |
| N55511 | CB230-1.000-D3-B.0-Z2 | 1 | 1 | 3 | 6 | 2 | |
| N55664 | CB230-1.000-D3-B.0-Z2 | 1 | 1 | 3 | 6 | 2 | TiAlN |
| N55512 | CB230-1.000-D4-B.0-Z2 | 1 | 1 | 4 | 7 | 2 | |
| N55665 | CB230-1.000-D4-B.0-Z2 | 1 | 1 | 4 | 7 | 2 | TiAlN |

# GENERAL PURPOSE- CSDB230

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

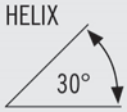
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N89734 | CSDB230-0.031-XF2-B.0-Z2 | 1/32 | 1/8 | 1/16 | 1-1/2 | 2 | |
| N89737 | CSDB230-0.031-XF2-B.0-Z2 | 1/32 | 1/8 | 1/16 | 1-1/2 | 2 | TiAlN |
| N89738 | CSDB230-0.047-XF2-B.0-Z2 | 3/64 | 1/8 | 3/32 | 1-1/2 | 2 | |
| N89741 | CSDB230-0.047-XF2-B.0-Z2 | 3/64 | 1/8 | 3/32 | 1-1/2 | 2 | TiAlN |
| N89742 | CSDB230-0.063-XF2-B.0-Z2 | 1/16 | 1/8 | 1/8 | 1-1/2 | 2 | |
| N89745 | CSDB230-0.063-XF2-B.0-Z2 | 1/16 | 1/8 | 1/8 | 1-1/2 | 2 | TiAlN |
| N89746 | CSDB230-0.078-XF2-B.0-Z2 | 5/64 | 1/8 | 1/8 | 1-1/2 | 2 | |
| N89749 | CSDB230-0.078-XF2-B.0-Z2 | 5/64 | 1/8 | 1/8 | 1-1/2 | 2 | TiAlN |
| N89750 | CSDB230-0.094-XF2-B.0-Z2 | 3/32 | 1/8 | 3/16 | 1-1/2 | 2 | |
| N89753 | CSDB230-0.094-XF2-B.0-Z2 | 3/32 | 1/8 | 3/16 | 1-1/2 | 2 | TiAlN |
| N89758 | CSDB230-0.125-XD2-B.0-Z2 | 1/8 | 1/8 | 1/4 | 1-1/2 | 2 | |
| N89761 | CSDB230-0.125-XD2-B.0-Z2 | 1/8 | 1/8 | 1/4 | 1-1/2 | 2 | TiAlN |
| N89762 | CSDB230-0.141-XF2-B.0-Z2 | 9/64 | 3/16 | 5/16 | 2 | 2 | |
| N89765 | CSDB230-0.141-XF2-B.0-Z2 | 9/64 | 3/16 | 5/16 | 2 | 2 | TiAlN |
| N89774 | CSDB230-0.188-XD2-B.0-Z2 | 3/16 | 3/16 | 3/8 | 2 | 2 | |
| N89777 | CSDB230-0.188-XD2-B.0-Z2 | 3/16 | 3/16 | 3/8 | 2 | 2 | TiAlN |
| N89790 | CSDB230-0.250-XD2-B.0-Z2 | 1/4 | 1/4 | 1/2 | 2-1/2 | 2 | |
| N89793 | CSDB230-0.250-XD2-B.0-Z2 | 1/4 | 1/4 | 1/2 | 2-1/2 | 2 | TiAlN |
| N89798 | CSDB230-0.313-XD2-B.0-Z2 | 5/16 | 5/16 | 1/2 | 2-1/2 | 2 | |
| N89801 | CSDB230-0.313-XD2-B.0-Z2 | 5/16 | 5/16 | 1/2 | 2-1/2 | 2 | TiAlN |
| N89806 | CSDB230-0.375-XD2-B.0-Z2 | 3/8 | 3/8 | 9/16 | 2-1/2 | 2 | |
| N89809 | CSDB230-0.375-XD2-B.0-Z2 | 3/8 | 3/8 | 9/16 | 2-1/2 | 2 | TiAlN |
| N89814 | CSDB230-0.500-XD1-B.0-Z2 | 1/2 | 1/2 | 5/8 | 3 | 2 | |
| N89817 | CSDB230-0.500-XD1-B.0-Z2 | 1/2 | 1/2 | 5/8 | 3 | 2 | TiAlN |

# METRIC GENERAL PURPOSE- C230M

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

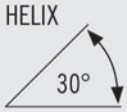
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N46327 | C230M-010-F4-S.0-Z2 | 1mm | 3mm | 4mm | 39mm | 2 | |
| N46328 | C230M-010-F4-S.0-Z2 | 1mm | 3mm | 4mm | 39mm | 2 | AlTiN |
| N46331 | C230M-020-F3-S.0-Z2 | 2mm | 3mm | 6.3mm | 39mm | 2 | |
| N46332 | C230M-020-F3-S.0-Z2 | 2mm | 3mm | 6.3mm | 39mm | 2 | AlTiN |
| N46335 | C230M-030-D4-S.0-Z2 | 3mm | 3mm | 12mm | 39mm | 2 | |
| N46336 | C230M-030-D4-S.0-Z2 | 3mm | 3mm | 12mm | 39mm | 2 | AlTiN |
| N46339 | C230M-040-D4-S.0-Z2 | 4mm | 4mm | 14mm | 51mm | 2 | |
| N46340 | C230M-040-D4-S.0-Z2 | 4mm | 4mm | 14mm | 51mm | 2 | AlTiN |
| N46341 | C230M-045-F4-S.0-Z2 | 4.5mm | 6mm | 16mm | 51mm | 2 | |
| N46342 | C230M-045-F4-S.0-Z2 | 4.5mm | 6mm | 16mm | 51mm | 2 | AlTiN |
| N46345 | C230M-060-D3-S.0-Z2 | 6mm | 6mm | 19mm | 51mm | 2 | |
| N46346 | C230M-060-D3-S.0-Z2 | 6mm | 6mm | 19mm | 51mm | 2 | AlTiN |
| N46349 | C230M-080-D2-S.0-Z2 | 8mm | 8mm | 20mm | 64mm | 2 | |
| N46350 | C230M-080-D2-S.0-Z2 | 8mm | 8mm | 20mm | 64mm | 2 | AlTiN |
| N46353 | C230M-100-D2-S.0-Z2 | 10mm | 10mm | 22mm | 73mm | 2 | |
| N46354 | C230M-100-D2-S.0-Z2 | 10mm | 10mm | 22mm | 73mm | 2 | AlTiN |
| N46357 | C230M-120-D2-S.0-Z2 | 12mm | 12mm | 25mm | 74mm | 2 | |
| N46358 | C230M-120-D2-S.0-Z2 | 12mm | 12mm | 25mm | 74mm | 2 | AlTiN |
| N46359 | C230M-140-F2-S.0-Z2 | 14mm | 14mm | 32mm | 84mm | 2 | |
| N46360 | C230M-140-F2-S.0-Z2 | 14mm | 14mm | 32mm | 84mm | 2 | AlTiN |
| N46361 | C230M-160-D2-S.0-Z2 | 16mm | 16mm | 32mm | 93mm | 2 | |
| N46362 | C230M-160-D2-S.0-Z2 | 16mm | 16mm | 32mm | 93mm | 2 | AlTiN |
| N46363 | C230M-180-D2-S.0-Z2 | 18mm | 18mm | 38mm | 100mm | 2 | |
| N46364 | C230M-180-D2-S.0-Z2 | 18mm | 18mm | 38mm | 100mm | 2 | AlTiN |
| N46365 | C230M-200-D2-S.0-Z2 | 20mm | 20mm | 38mm | 100mm | 2 | |
| N46366 | C230M-200-D2-S.0-Z2 | 20mm | 20mm | 38mm | 100mm | 2 | AlTiN |

# METRIC GENERAL PURPOSE- CB230M

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

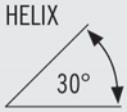
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N34419 | CB230M-005-F2-B.0-Z2 | 0.5mm | 3mm | 1mm | 39mm | 2 | |
| N34420 | CB230M-005-F2-B.0-Z2 | 0.5mm | 3mm | 1mm | 39mm | 2 | AlTiN |
| N46369 | CB230M-010-F4-B.0-Z2 | 1mm | 3mm | 4mm | 39mm | 2 | |
| N46370 | CB230M-010-F4-B.0-Z2 | 1mm | 3mm | 4mm | 39mm | 2 | AlTiN |
| N46373 | CB230M-020-F3-B.0-Z2 | 2mm | 3mm | 6.3mm | 39mm | 2 | |
| N46374 | CB230M-020-F3-B.0-Z2 | 2mm | 3mm | 6.3mm | 39mm | 2 | AlTiN |
| N46377 | CB230M-030-D4-B.0-Z2 | 3mm | 3mm | 12mm | 39mm | 2 | |
| N46378 | CB230M-030-D4-B.0-Z2 | 3mm | 3mm | 12mm | 39mm | 2 | AlTiN |
| N46381 | CB230M-040-D4-B.0-Z2 | 4mm | 4mm | 14mm | 51mm | 2 | |
| N46382 | CB230M-040-D4-B.0-Z2 | 4mm | 4mm | 14mm | 51mm | 2 | AlTiN |
| N46385 | CB230M-050-F3-B.0-Z2 | 5mm | 6mm | 16mm | 51mm | 2 | |
| N46386 | CB230M-050-F3-B.0-Z2 | 5mm | 6mm | 16mm | 51mm | 2 | AlTiN |
| N46387 | CB230M-060-D3-B.0-Z2 | 6mm | 6mm | 19mm | 51mm | 2 | |
| N46388 | CB230M-060-D3-B.0-Z2 | 6mm | 6mm | 19mm | 51mm | 2 | AlTiN |
| N46391 | CB230M-080-D2-B.0-Z2 | 8mm | 8mm | 20mm | 64mm | 2 | |
| N46392 | CB230M-080-D2-B.0-Z2 | 8mm | 8mm | 20mm | 64mm | 2 | AlTiN |
| N46395 | CB230M-100-D2-B.0-Z2 | 10mm | 10mm | 22mm | 73mm | 2 | |
| N46396 | CB230M-100-D2-B.0-Z2 | 10mm | 10mm | 22mm | 73mm | 2 | AlTiN |
| N46399 | CB230M-120-D2-B.0-Z2 | 12mm | 12mm | 25mm | 74mm | 2 | |
| N46400 | CB230M-120-D2-B.0-Z2 | 12mm | 12mm | 25mm | 74mm | 2 | AlTiN |
| N46401 | CB230M-140-F2-B.0-Z2 | 14mm | 14mm | 32mm | 84mm | 2 | |
| N46402 | CB230M-140-F2-B.0-Z2 | 14mm | 14mm | 32mm | 84mm | 2 | AlTiN |
| N46403 | CB230M-160-D2-B.0-Z2 | 16mm | 16mm | 32mm | 93mm | 2 | |
| N46404 | CB230M-160-D2-B.0-Z2 | 16mm | 16mm | 32mm | 93mm | 2 | AlTiN |
| N46405 | CB230M-180-D2-B.0-Z2 | 18mm | 18mm | 38mm | 100mm | 2 | |
| N46406 | CB230M-180-D2-B.0-Z2 | 18mm | 18mm | 38mm | 100mm | 2 | AlTiN |
| N46407 | CB230M-200-D2-B.0-Z2 | 20mm | 20mm | 38mm | 100mm | 2 | |
| N46408 | CB230M-200-D2-B.0-Z2 | 20mm | 20mm | 38mm | 100mm | 2 | AlTiN |
| N46409 | CB230M-250-D2-B.0-Z2 | 25mm | 25mm | 38mm | 101mm | 2 | |
| N46410 | CB230M-250-D2-B.0-Z2 | 25mm | 25mm | 38mm | 101mm | 2 | AlTiN |

# GENERAL PURPOSE- C330

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- General Purpose

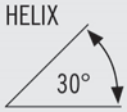
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85920 | C330-0.031-F3-S.0-Z3 | 1/32 | 1/8 | 5/64 | 1-1/2 | 3 | |
| N85996 | C330-0.031-F3-S.0-Z3 | 1/32 | 1/8 | 5/64 | 1-1/2 | 3 | TiAlN |
| N85921 | C330-0.047-F2-S.0-Z3 | 3/64 | 1/8 | 7/64 | 1-1/2 | 3 | |
| N85997 | C330-0.047-F2-S.0-Z3 | 3/64 | 1/8 | 7/64 | 1-1/2 | 3 | TiAlN |
| N85922 | C330-0.063-F3-S.0-Z3 | 1/16 | 1/8 | 3/16 | 1-1/2 | 3 | |
| N85998 | C330-0.063-F3-S.0-Z3 | 1/16 | 1/8 | 3/16 | 1-1/2 | 3 | TiAlN |
| N85923 | C330-0.078-F2-S.0-Z3 | 5/64 | 1/8 | 3/16 | 1-1/2 | 3 | |
| N85999 | C330-0.078-F2-S.0-Z3 | 5/64 | 1/8 | 3/16 | 1-1/2 | 3 | TiAlN |
| N85924 | C330-0.094-F3-S.0-Z3 | 3/32 | 1/8 | 9/32 | 1-1/2 | 3 | |
| N86000 | C330-0.094-F3-S.0-Z3 | 3/32 | 1/8 | 9/32 | 1-1/2 | 3 | TiAlN |
| N85925 | C330-0.109-F3-S.0-Z3 | 7/64 | 1/8 | 3/8 | 1-1/2 | 3 | |
| N86001 | C330-0.109-F3-S.0-Z3 | 7/64 | 1/8 | 3/8 | 1-1/2 | 3 | TiAlN |
| N85926 | C330-0.125-D4-S.0-Z3 | 1/8 | 1/8 | 1/2 | 1-1/2 | 3 | |
| N86002 | C330-0.125-D4-S.0-Z3 | 1/8 | 1/8 | 1/2 | 1-1/2 | 3 | TiAlN |
| N85928 | C330-0.156-F3-S.0-Z3 | 5/32 | 3/16 | 1/2 | 2 | 3 | |
| N86004 | C330-0.156-F3-S.0-Z3 | 5/32 | 3/16 | 1/2 | 2 | 3 | TiAlN |
| N85930 | C330-0.188-D3-S.0-Z3 | 3/16 | 3/16 | 5/8 | 2 | 3 | |
| N86006 | C330-0.188-D3-S.0-Z3 | 3/16 | 3/16 | 5/8 | 2 | 3 | TiAlN |
| N85931 | C330-0.203-F3-S.0-Z3 | 13/64 | 1/4 | 5/8 | 2-1/2 | 3 | |
| N86007 | C330-0.203-F3-S.0-Z3 | 13/64 | 1/4 | 5/8 | 2-1/2 | 3 | TiAlN |
| N85932 | C330-0.219-F3-S.0-Z3 | 7/32 | 1/4 | 5/8 | 2-1/2 | 3 | |
| N86008 | C330-0.219-F3-S.0-Z3 | 7/32 | 1/4 | 5/8 | 2-1/2 | 3 | TiAlN |
| N85933 | C330-0.234-F3-S.0-Z3 | 15/64 | 1/4 | 3/4 | 2-1/2 | 3 | |
| N86009 | C330-0.234-F3-S.0-Z3 | 15/64 | 1/4 | 3/4 | 2-1/2 | 3 | TiAlN |
| N85934 | C330-0.250-D3-S.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | |
| N86010 | C330-0.250-D3-S.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | TiAlN |
| N85938 | C330-0.313-D3-S.0-Z3 | 5/16 | 5/16 | 13/16 | 2-1/2 | 3 | |
| N86014 | C330-0.313-D3-S.0-Z3 | 5/16 | 5/16 | 13/16 | 2-1/2 | 3 | TiAlN |
| N85942 | C330-0.375-D3-S.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | |
| N86018 | C330-0.375-D3-S.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | TiAlN |
| N85946 | C330-0.438-D2-S.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | |
| N86022 | C330-0.438-D2-S.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | TiAlN |
| N85950 | C330-0.500-D2-S.0-Z3 | 1/2 | 1/2 | 1 | 3 | 3 | |
| N86026 | C330-0.500-D2-S.0-Z3 | 1/2 | 1/2 | 1 | 3 | 3 | TiAlN |
| N85951 | C330-0.563-D2-S.0-Z3 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 3 | |
| N86027 | C330-0.563-D2-S.0-Z3 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 3 | TiAlN |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- C330

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

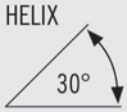
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85952 | C330-0.625-D2-S.0-Z3 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 3 | |
| N86028 | C330-0.625-D2-S.0-Z3 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 3 | TiAlN |
| N85953 | C330-0.688-F2-S.0-Z3 | 11/16 | 3/4 | 1-3/8 | 4 | 3 | |
| N86029 | C330-0.688-F2-S.0-Z3 | 11/16 | 3/4 | 1-3/8 | 4 | 3 | TiAlN |
| N85954 | C330-0.750-D2-S.0-Z3 | 3/4 | 3/4 | 1-1/2 | 4 | 3 | |
| N86030 | C330-0.750-D2-S.0-Z3 | 3/4 | 3/4 | 1-1/2 | 4 | 3 | TiAlN |
| N85955 | C330-0.875-D2-S.0-Z3 | 7/8 | 7/8 | 1-1/2 | 4 | 3 | |
| N86031 | C330-0.875-D2-S.0-Z3 | 7/8 | 7/8 | 1-1/2 | 4 | 3 | TiAlN |
| N85956 | C330-1.000-D2-S.0-Z3 | 1 | 1 | 1-1/2 | 4 | 3 | |
| N86032 | C330-1.000-D2-S.0-Z3 | 1 | 1 | 1-1/2 | 4 | 3 | TiAlN |

# GENERAL PURPOSE- CB330

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

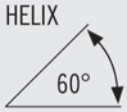
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N86034 | CB330-0.016-F2-B.0-Z3 | 1/64 | 1/8 | 1/32 | 1-1/2 | 3 | |
| N86110 | CB330-0.016-F2-B.0-Z3 | 1/64 | 1/8 | 1/32 | 1-1/2 | 3 | TiAlN |
| N86035 | CB330-0.031-F3-B.0-Z3 | 1/32 | 1/8 | 5/64 | 1-1/2 | 3 | |
| N86111 | CB330-0.031-F3-B.0-Z3 | 1/32 | 1/8 | 5/64 | 1-1/2 | 3 | TiAlN |
| N86037 | CB330-0.063-F3-B.0-Z3 | 1/16 | 1/8 | 3/16 | 1-1/2 | 3 | |
| N86113 | CB330-0.063-F3-B.0-Z3 | 1/16 | 1/8 | 3/16 | 1-1/2 | 3 | TiAlN |
| N86039 | CB330-0.094-F3-B.0-Z3 | 3/32 | 1/8 | 9/32 | 1-1/2 | 3 | |
| N86115 | CB330-0.094-F3-B.0-Z3 | 3/32 | 1/8 | 9/32 | 1-1/2 | 3 | TiAlN |
| N86041 | CB330-0.125-D4-B.0-Z3 | 1/8 | 1/8 | 1/2 | 1-1/2 | 3 | |
| N86117 | CB330-0.125-D4-B.0-Z3 | 1/8 | 1/8 | 1/2 | 1-1/2 | 3 | TiAlN |
| N86043 | CB330-0.156-F3-B.0-Z3 | 5/32 | 3/16 | 1/2 | 2 | 3 | |
| N86119 | CB330-0.156-F3-B.0-Z3 | 5/32 | 3/16 | 1/2 | 2 | 3 | TiAlN |
| N86045 | CB330-0.188-D3-B.0-Z3 | 3/16 | 3/16 | 5/8 | 2 | 3 | |
| N86121 | CB330-0.188-D3-B.0-Z3 | 3/16 | 3/16 | 5/8 | 2 | 3 | TiAlN |
| N86047 | CB330-0.219-F3-B.0-Z3 | 7/32 | 1/4 | 5/8 | 2-1/2 | 3 | |
| N86123 | CB330-0.219-F3-B.0-Z3 | 7/32 | 1/4 | 5/8 | 2-1/2 | 3 | TiAlN |
| N86049 | CB330-0.250-D3-B.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | |
| N86125 | CB330-0.250-D3-B.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | TiAlN |
| N86057 | CB330-0.375-D3-B.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | |
| N86133 | CB330-0.375-D3-B.0-Z3 | 3/8 | 3/8 | 1 | 2-1/2 | 3 | TiAlN |
| N86061 | CB330-0.438-D2-B.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | |
| N86137 | CB330-0.438-D2-B.0-Z3 | 7/16 | 7/16 | 1 | 2-3/4 | 3 | TiAlN |
| N86065 | CB330-0.500-D2-B.0-Z3 | 1/2 | 1/2 | 1 | 3 | 3 | |
| N86141 | CB330-0.500-D2-B.0-Z3 | 1/2 | 1/2 | 1 | 3 | 3 | TiAlN |
| N86066 | CB330-0.563-D2-B.0-Z3 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 3 | |
| N86142 | CB330-0.563-D2-B.0-Z3 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 3 | TiAlN |
| N86067 | CB330-0.625-D2-B.0-Z3 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 3 | |
| N86143 | CB330-0.625-D2-B.0-Z3 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 3 | TiAlN |
| N86069 | CB330-0.750-D2-B.0-Z3 | 3/4 | 3/4 | 1-1/2 | 4 | 3 | |
| N86145 | CB330-0.750-D2-B.0-Z3 | 3/4 | 3/4 | 1-1/2 | 4 | 3 | TiAlN |
| N86071 | CB330-1.000-D2-B.0-Z3 | 1 | 1 | 1-1/2 | 4 | 3 | |
| N86147 | CB330-1.000-D2-B.0-Z3 | 1 | 1 | 1-1/2 | 4 | 3 | TiAlN |

# GENERAL PURPOSE- C360

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

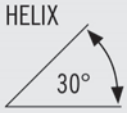
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N18854 | C360-0.250-D3-S.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | |
| N86850 | C360-0.250-D3-S.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | TiAlN |
| N18858 | C360-0.375-D2-S.0-Z3 | 3/8 | 3/8 | 7/8 | 2-1/2 | 3 | |
| N86852 | C360-0.375-D2-S.0-Z3 | 3/8 | 3/8 | 7/8 | 2-1/2 | 3 | TiAlN |
| N18862 | C360-0.500-D2-S.0-Z3 | 1/2 | 1/2 | 1 | 3 | 3 | |
| N86854 | C360-0.500-D2-S.0-Z3 | 1/2 | 1/2 | 1 | 3 | 3 | TiAlN |
| N18866 | C360-0.625-D2-S.0-Z3 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 3 | |
| N86856 | C360-0.625-D2-S.0-Z3 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 3 | TiAlN |
| N18870 | C360-0.750-D3-S.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | |
| N86858 | C360-0.750-D3-S.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | TiAlN |
| N18874 | C360-1.000-D3-S.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | |
| N86860 | C360-1.000-D3-S.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | TiAlN |

# METRIC GENERAL PURPOSE- C330M

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

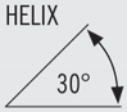
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N47703 | C330M-010-F4-S.0-Z3 | 1mm | 3mm | 4mm | 39mm | 3 | |
| N47704 | C330M-010-F4-S.0-Z3 | 1mm | 3mm | 4mm | 39mm | 3 | AlTiN |
| N47713 | C330M-030-D4-S.0-Z3 | 3mm | 3mm | 12mm | 39mm | 3 | |
| N47714 | C330M-030-D4-S.0-Z3 | 3mm | 3mm | 12mm | 39mm | 3 | AlTiN |
| N47715 | C330M-035-F3-S.0-Z3 | 3.5mm | 4mm | 12mm | 51mm | 3 | |
| N47716 | C330M-035-F3-S.0-Z3 | 3.5mm | 4mm | 12mm | 51mm | 3 | AlTiN |
| N47727 | C330M-060-D3-S.0-Z3 | 6mm | 6mm | 19mm | 51mm | 3 | |
| N47728 | C330M-060-D3-S.0-Z3 | 6mm | 6mm | 19mm | 51mm | 3 | AlTiN |
| N47733 | C330M-080-D2-S.0-Z3 | 8mm | 8mm | 20mm | 64mm | 3 | |
| N47734 | C330M-080-D2-S.0-Z3 | 8mm | 8mm | 20mm | 64mm | 3 | AlTiN |
| N47739 | C330M-100-D2-S.0-Z3 | 10mm | 10mm | 22mm | 73mm | 3 | |
| N47740 | C330M-100-D2-S.0-Z3 | 10mm | 10mm | 22mm | 73mm | 3 | AlTiN |
| N47741 | C330M-110-F2-S.0-Z3 | 11mm | 12mm | 25mm | 74mm | 3 | |
| N47742 | C330M-110-F2-S.0-Z3 | 11mm | 12mm | 25mm | 74mm | 3 | AlTiN |
| N47745 | C330M-120-D2-S.0-Z3 | 12mm | 12mm | 25mm | 74mm | 3 | |
| N47746 | C330M-120-D2-S.0-Z3 | 12mm | 12mm | 25mm | 74mm | 3 | AlTiN |
| N47747 | C330M-140-F2-S.0-Z3 | 14mm | 14mm | 32mm | 84mm | 3 | |
| N47748 | C330M-140-F2-S.0-Z3 | 14mm | 14mm | 32mm | 84mm | 3 | AlTiN |
| N47751 | C330M-160-D2-S.0-Z3 | 16mm | 16mm | 32mm | 93mm | 3 | |
| N47752 | C330M-160-D2-S.0-Z3 | 16mm | 16mm | 32mm | 93mm | 3 | AlTiN |
| N47759 | C330M-200-D2-S.0-Z3 | 20mm | 20mm | 32mm | 104mm | 3 | |
| N47760 | C330M-200-D2-S.0-Z3 | 20mm | 20mm | 32mm | 104mm | 3 | AlTiN |

# GENERAL PURPOSE- C430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- General Purpose

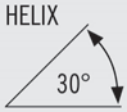
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85503 | C430-0.016-F2-S.0-Z4 | 1/64 | 1/8 | 1/32 | 1-1/2 | 4 | |
| N85579 | C430-0.016-F2-S.0-Z4 | 1/64 | 1/8 | 1/32 | 1-1/2 | 4 | TiAlN |
| N85504 | C430-0.031-F3-S.0-Z4 | 1/32 | 1/8 | 5/64 | 1-1/2 | 4 | |
| N85580 | C430-0.031-F3-S.0-Z4 | 1/32 | 1/8 | 5/64 | 1-1/2 | 4 | TiAlN |
| N55666 | C430-0.031-F4-S.0-Z4 | 1/32 | 1/8 | 3/32 | 1-1/2 | 4 | |
| N55792 | C430-0.031-F4-S.0-Z4 | 1/32 | 1/8 | 3/32 | 1-1/2 | 4 | TiAlN |
| N85505 | C430-0.047-F2-S.0-Z4 | 3/64 | 1/8 | 7/64 | 1-1/2 | 4 | |
| N85581 | C430-0.047-F2-S.0-Z4 | 3/64 | 1/8 | 7/64 | 1-1/2 | 4 | TiAlN |
| N55667 | C430-0.047-F3-S.0-Z4 | 3/64 | 1/8 | 1/8 | 1-1/2 | 4 | |
| N55793 | C430-0.047-F3-S.0-Z4 | 3/64 | 1/8 | 1/8 | 1-1/2 | 4 | TiAlN |
| N85652 | C430-0.063-F2-S.0-Z4 | 1/16 | 1/8 | 1/8 | 1-1/2 | 4 | |
| N85678 | C430-0.063-F2-S.0-Z4 | 1/16 | 1/8 | 1/8 | 1-1/2 | 4 | TiAlN |
| N85506 | C430-0.063-F3-S.0-Z4 | 1/16 | 1/8 | 3/16 | 1-1/2 | 4 | |
| N85582 | C430-0.063-F3-S.0-Z4 | 1/16 | 1/8 | 3/16 | 1-1/2 | 4 | TiAlN |
| N55668 | C430-0.063-F4-S.0-Z4 | 1/16 | 1/8 | 1/4 | 1-1/2 | 4 | |
| N55794 | C430-0.063-F4-S.0-Z4 | 1/16 | 1/8 | 1/4 | 1-1/2 | 4 | TiAlN |
| N55669 | C430-0.063-F8-S.0-Z4 | 1/16 | 1/8 | 1 | 3 | 4 | |
| N55795 | C430-0.063-F8-S.0-Z4 | 1/16 | 1/8 | 1 | 3 | 4 | TiAlN |
| N55670 | C430-0.063-F9-S.0-Z4 | 1/16 | 1/8 | 1 | 4 | 4 | |
| N55796 | C430-0.063-F9-S.0-Z4 | 1/16 | 1/8 | 1 | 4 | 4 | TiAlN |
| N85507 | C430-0.078-F2-S.0-Z4 | 5/64 | 1/8 | 3/16 | 1-1/2 | 4 | |
| N85583 | C430-0.078-F2-S.0-Z4 | 5/64 | 1/8 | 3/16 | 1-1/2 | 4 | TiAlN |
| N55671 | C430-0.078-F3-S.0-Z4 | 5/64 | 1/8 | 1/4 | 1-1/2 | 4 | |
| N55797 | C430-0.078-F3-S.0-Z4 | 5/64 | 1/8 | 1/4 | 1-1/2 | 4 | TiAlN |
| N85653 | C430-0.094-F2-S.0-Z4 | 3/32 | 1/8 | 3/16 | 1-1/2 | 4 | |
| N85679 | C430-0.094-F2-S.0-Z4 | 3/32 | 1/8 | 3/16 | 1-1/2 | 4 | TiAlN |
| N85508 | C430-0.094-F3-S.0-Z4 | 3/32 | 1/8 | 9/32 | 1-1/2 | 4 | |
| N85584 | C430-0.094-F3-S.0-Z4 | 3/32 | 1/8 | 9/32 | 1-1/2 | 4 | TiAlN |
| N55672 | C430-0.094-F4-S.0-Z4 | 3/32 | 1/8 | 3/8 | 1-1/2 | 4 | |
| N55798 | C430-0.094-F4-S.0-Z4 | 3/32 | 1/8 | 3/8 | 1-1/2 | 4 | TiAlN |
| N55673 | C430-0.094-F8-S.0-Z4 | 3/32 | 1/8 | 1 | 3 | 4 | |
| N55799 | C430-0.094-F8-S.0-Z4 | 3/32 | 1/8 | 1 | 3 | 4 | TiAlN |
| N55674 | C430-0.094-F9-S.0-Z4 | 3/32 | 1/8 | 1 | 4 | 4 | |
| N55800 | C430-0.094-F9-S.0-Z4 | 3/32 | 1/8 | 1 | 4 | 4 | TiAlN |
| N85509 | C430-0.109-F3-S.0-Z4 | 7/64 | 1/8 | 3/8 | 1-1/2 | 4 | |
| N85585 | C430-0.109-F3-S.0-Z4 | 7/64 | 1/8 | 3/8 | 1-1/2 | 4 | TiAlN |
| N85654 | C430-0.125-D2-S.0-Z4 | 1/8 | 1/8 | 1/4 | 1-1/2 | 4 | |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- C430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- General Purpose

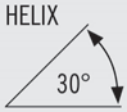
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85680 | C430-0.125-D2-S.0-Z4 | 1/8 | 1/8 | 1/4 | 1-1/2 | 4 | TiAlN |
| N85510 | C430-0.125-D4-S.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | |
| N85586 | C430-0.125-D4-S.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | TiAlN |
| N55675 | C430-0.125-D5-S.0-Z4 | 1/8 | 1/8 | 5/8 | 2 | 4 | |
| N55801 | C430-0.125-D5-S.0-Z4 | 1/8 | 1/8 | 5/8 | 2 | 4 | TiAlN |
| N55676 | C430-0.125-D6-S.0-Z4 | 1/8 | 1/8 | 3/4 | 3 | 4 | |
| N55802 | C430-0.125-D6-S.0-Z4 | 1/8 | 1/8 | 3/4 | 3 | 4 | TiAlN |
| N55677 | C430-0.125-D8-S.0-Z4 | 1/8 | 1/8 | 1 | 3 | 4 | |
| N55803 | C430-0.125-D8-S.0-Z4 | 1/8 | 1/8 | 1 | 3 | 4 | TiAlN |
| N55678 | C430-0.125-D9-S.0-Z4 | 1/8 | 1/8 | 1 | 4 | 4 | |
| N55804 | C430-0.125-D9-S.0-Z4 | 1/8 | 1/8 | 1 | 4 | 4 | TiAlN |
| N85511 | C430-0.141-F4-S.0-Z4 | 9/64 | 3/16 | 1/2 | 2 | 4 | |
| N85587 | C430-0.141-F4-S.0-Z4 | 9/64 | 3/16 | 1/2 | 2 | 4 | TiAlN |
| N85655 | C430-0.156-F2-S.0-Z4 | 5/32 | 3/16 | 5/16 | 2 | 4 | |
| N85681 | C430-0.156-F2-S.0-Z4 | 5/32 | 3/16 | 5/16 | 2 | 4 | TiAlN |
| N85512 | C430-0.156-F3-S.0-Z4 | 5/32 | 3/16 | 1/2 | 2 | 4 | |
| N85588 | C430-0.156-F3-S.0-Z4 | 5/32 | 3/16 | 1/2 | 2 | 4 | TiAlN |
| N85513 | C430-0.172-F4-S.0-Z4 | 11/64 | 3/16 | 5/8 | 2 | 4 | |
| N85589 | C430-0.172-F4-S.0-Z4 | 11/64 | 3/16 | 5/8 | 2 | 4 | TiAlN |
| N85656 | C430-0.188-D2-S.0-Z4 | 3/16 | 3/16 | 3/8 | 2 | 4 | |
| N85682 | C430-0.188-D2-S.0-Z4 | 3/16 | 3/16 | 3/8 | 2 | 4 | TiAlN |
| N85514 | C430-0.188-D3-S.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | |
| N85590 | C430-0.188-D3-S.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | TiAlN |
| N85692 | C430-0.188-D4-S.0-Z4 | 3/16 | 3/16 | 3/4 | 2-1/2 | 4 | |
| N85728 | C430-0.188-D4-S.0-Z4 | 3/16 | 3/16 | 3/4 | 2-1/2 | 4 | TiAlN |
| N55679 | C430-0.188-D5-S.0-Z4 | 3/16 | 3/16 | 1 | 3 | 4 | |
| N55805 | C430-0.188-D5-S.0-Z4 | 3/16 | 3/16 | 1 | 3 | 4 | TiAlN |
| N55680 | C430-0.188-D6-S.0-Z4 | 3/16 | 3/16 | 1 | 4 | 4 | |
| N55806 | C430-0.188-D6-S.0-Z4 | 3/16 | 3/16 | 1 | 4 | 4 | TiAlN |
| N85693 | C430-0.188-D7-S.0-Z4 | 3/16 | 3/16 | 1-1/8 | 3 | 4 | |
| N85729 | C430-0.188-D7-S.0-Z4 | 3/16 | 3/16 | 1-1/8 | 3 | 4 | TiAlN |
| N85515 | C430-0.203-F3-S.0-Z4 | 13/64 | 1/4 | 5/8 | 2-1/2 | 4 | |
| N85591 | C430-0.203-F3-S.0-Z4 | 13/64 | 1/4 | 5/8 | 2-1/2 | 4 | TiAlN |
| N85657 | C430-0.219-F2-S.0-Z4 | 7/32 | 1/4 | 7/16 | 2 | 4 | |
| N85683 | C430-0.219-F2-S.0-Z4 | 7/32 | 1/4 | 7/16 | 2 | 4 | TiAlN |
| N85516 | C430-0.219-F3-S.0-Z4 | 7/32 | 1/4 | 5/8 | 2-1/2 | 4 | |
| N85592 | C430-0.219-F3-S.0-Z4 | 7/32 | 1/4 | 5/8 | 2-1/2 | 4 | TiAlN |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- C430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- General Purpose

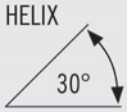
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85517 | C430-0.234-F3-S.0-Z4 | 15/64 | 1/4 | 3/4 | 2-1/2 | 4 | |
| N85593 | C430-0.234-F3-S.0-Z4 | 15/64 | 1/4 | 3/4 | 2-1/2 | 4 | TiAlN |
| N85658 | C430-0.250-D2-S.0-Z4 | 1/4 | 1/4 | 1/2 | 2 | 4 | |
| N85684 | C430-0.250-D2-S.0-Z4 | 1/4 | 1/4 | 1/2 | 2 | 4 | TiAlN |
| N85518 | C430-0.250-D3-S.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | |
| N85594 | C430-0.250-D3-S.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | TiAlN |
| N55681 | C430-0.250-D4-S.0-Z4 | 1/4 | 1/4 | 1 | 3 | 4 | |
| N55807 | C430-0.250-D4-S.0-Z4 | 1/4 | 1/4 | 1 | 3 | 4 | TiAlN |
| N55682 | C430-0.250-D5-S.0-Z4 | 1/4 | 1/4 | 1 | 4 | 4 | |
| N55808 | C430-0.250-D5-S.0-Z4 | 1/4 | 1/4 | 1 | 4 | 4 | TiAlN |
| N85694 | C430-0.250-D6-S.0-Z4 | 1/4 | 1/4 | 1-1/8 | 3 | 4 | |
| N85730 | C430-0.250-D6-S.0-Z4 | 1/4 | 1/4 | 1-1/8 | 3 | 4 | TiAlN |
| N85695 | C430-0.250-D7-S.0-Z4 | 1/4 | 1/4 | 1-1/2 | 4 | 4 | |
| N85731 | C430-0.250-D7-S.0-Z4 | 1/4 | 1/4 | 1-1/2 | 4 | 4 | TiAlN |
| N55683 | C430-0.250-D8-S.0-Z4 | 1/4 | 1/4 | 1-1/2 | 6 | 4 | |
| N55809 | C430-0.250-D8-S.0-Z4 | 1/4 | 1/4 | 1-1/2 | 6 | 4 | TiAlN |
| N85519 | C430-0.266-F3-S.0-Z4 | 17/64 | 5/16 | 3/4 | 2-1/2 | 4 | |
| N85595 | C430-0.266-F3-S.0-Z4 | 17/64 | 5/16 | 3/4 | 2-1/2 | 4 | TiAlN |
| N85520 | C430-0.281-F3-S.0-Z4 | 9/32 | 5/16 | 3/4 | 2-1/2 | 4 | |
| N85596 | C430-0.281-F3-S.0-Z4 | 9/32 | 5/16 | 3/4 | 2-1/2 | 4 | TiAlN |
| N85521 | C430-0.297-F3-S.0-Z4 | 19/64 | 5/16 | 13/16 | 2-1/2 | 4 | |
| N85597 | C430-0.297-F3-S.0-Z4 | 19/64 | 5/16 | 13/16 | 2-1/2 | 4 | TiAlN |
| N85659 | C430-0.313-D2-S.0-Z4 | 5/16 | 5/16 | 1/2 | 2 | 4 | |
| N85685 | C430-0.313-D2-S.0-Z4 | 5/16 | 5/16 | 1/2 | 2 | 4 | TiAlN |
| N85522 | C430-0.313-D3-S.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | |
| N85598 | C430-0.313-D3-S.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | TiAlN |
| N55684 | C430-0.313-D4-S.0-Z4 | 5/16 | 5/16 | 1 | 3 | 4 | |
| N55810 | C430-0.313-D4-S.0-Z4 | 5/16 | 5/16 | 1 | 3 | 4 | TiAlN |
| N55685 | C430-0.313-D5-S.0-Z4 | 5/16 | 5/16 | 1 | 4 | 4 | |
| N55811 | C430-0.313-D5-S.0-Z4 | 5/16 | 5/16 | 1 | 4 | 4 | TiAlN |
| N85696 | C430-0.313-D6-S.0-Z4 | 5/16 | 5/16 | 1-1/8 | 3 | 4 | |
| N85732 | C430-0.313-D6-S.0-Z4 | 5/16 | 5/16 | 1-1/8 | 3 | 4 | TiAlN |
| N55686 | C430-0.313-D7-S.0-Z4 | 5/16 | 5/16 | 1-1/2 | 6 | 4 | |
| N55812 | C430-0.313-D7-S.0-Z4 | 5/16 | 5/16 | 1-1/2 | 6 | 4 | TiAlN |
| N85697 | C430-0.313-D8-S.0-Z4 | 5/16 | 5/16 | 1-5/8 | 4 | 4 | |
| N85733 | C430-0.313-D8-S.0-Z4 | 5/16 | 5/16 | 1-5/8 | 4 | 4 | TiAlN |
| N85523 | C430-0.328-F3-S.0-Z4 | 21/64 | 3/8 | 1 | 2-1/2 | 4 | |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- C430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- General Purpose

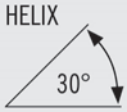
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85599 | C430-0.328-F3-S.0-Z4 | 21/64 | 3/8 | 1 | 2-1/2 | 4 | TiAlN |
| N85524 | C430-0.344-F3-S.0-Z4 | 11/32 | 3/8 | 1 | 2-1/2 | 4 | |
| N85600 | C430-0.344-F3-S.0-Z4 | 11/32 | 3/8 | 1 | 2-1/2 | 4 | TiAlN |
| N85525 | C430-0.359-F3-S.0-Z4 | 23/64 | 3/8 | 1 | 2-1/2 | 4 | |
| N85601 | C430-0.359-F3-S.0-Z4 | 23/64 | 3/8 | 1 | 2-1/2 | 4 | TiAlN |
| N85660 | C430-0.375-D1-S.0-Z4 | 3/8 | 3/8 | 5/8 | 2 | 4 | |
| N85686 | C430-0.375-D1-S.0-Z4 | 3/8 | 3/8 | 5/8 | 2 | 4 | TiAlN |
| N85526 | C430-0.375-D2-S.0-Z4 | 3/8 | 3/8 | 1 | 2-1/2 | 4 | |
| N85602 | C430-0.375-D2-S.0-Z4 | 3/8 | 3/8 | 1 | 2-1/2 | 4 | TiAlN |
| N55687 | C430-0.375-D3-S.0-Z4 | 3/8 | 3/8 | 1 | 3 | 4 | |
| N55813 | C430-0.375-D3-S.0-Z4 | 3/8 | 3/8 | 1 | 3 | 4 | TiAlN |
| N55688 | C430-0.375-D4-S.0-Z4 | 3/8 | 3/8 | 1 | 4 | 4 | |
| N55814 | C430-0.375-D4-S.0-Z4 | 3/8 | 3/8 | 1 | 4 | 4 | TiAlN |
| N85698 | C430-0.375-D5-S.0-Z4 | 3/8 | 3/8 | 1-1/8 | 3 | 4 | |
| N85734 | C430-0.375-D5-S.0-Z4 | 3/8 | 3/8 | 1-1/8 | 3 | 4 | TiAlN |
| N55689 | C430-0.375-D6-S.0-Z4 | 3/8 | 3/8 | 1-1/2 | 6 | 4 | |
| N55815 | C430-0.375-D6-S.0-Z4 | 3/8 | 3/8 | 1-1/2 | 6 | 4 | TiAlN |
| N85699 | C430-0.375-D7-S.0-Z4 | 3/8 | 3/8 | 1-3/4 | 4 | 4 | |
| N85735 | C430-0.375-D7-S.0-Z4 | 3/8 | 3/8 | 1-3/4 | 4 | 4 | TiAlN |
| N55690 | C430-0.375-D8-S.0-Z4 | 3/8 | 3/8 | 2 | 4 | 4 | |
| N55816 | C430-0.375-D8-S.0-Z4 | 3/8 | 3/8 | 2 | 4 | 4 | TiAlN |
| N55691 | C430-0.375-D9-S.0-Z4 | 3/8 | 3/8 | 3 | 6 | 4 | |
| N55817 | C430-0.375-D9-S.0-Z4 | 3/8 | 3/8 | 3 | 6 | 4 | TiAlN |
| N85527 | C430-0.391-F3-S.0-Z4 | 25/64 | 7/16 | 1 | 2-3/4 | 4 | |
| N85603 | C430-0.391-F3-S.0-Z4 | 25/64 | 7/16 | 1 | 2-3/4 | 4 | TiAlN |
| N85528 | C430-0.406-F2-S.0-Z4 | 13/32 | 7/16 | 1 | 2-3/4 | 4 | |
| N85604 | C430-0.406-F2-S.0-Z4 | 13/32 | 7/16 | 1 | 2-3/4 | 4 | TiAlN |
| N85529 | C430-0.422-F2-S.0-Z4 | 27/64 | 7/16 | 1 | 2-3/4 | 4 | |
| N85605 | C430-0.422-F2-S.0-Z4 | 27/64 | 7/16 | 1 | 2-3/4 | 4 | TiAlN |
| N85661 | C430-0.438-D1-S.0-Z4 | 7/16 | 7/16 | 5/8 | 2-1/2 | 4 | |
| N85687 | C430-0.438-D1-S.0-Z4 | 7/16 | 7/16 | 5/8 | 2-1/2 | 4 | TiAlN |
| N85530 | C430-0.438-D2-S.0-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | |
| N85606 | C430-0.438-D2-S.0-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | TiAlN |
| N55692 | C430-0.438-D3-S.0-Z4 | 7/16 | 7/16 | 1 | 4 | 4 | |
| N55818 | C430-0.438-D3-S.0-Z4 | 7/16 | 7/16 | 1 | 4 | 4 | TiAlN |
| N55693 | C430-0.438-D4-S.0-Z4 | 7/16 | 7/16 | 1-1/2 | 6 | 4 | |
| N55819 | C430-0.438-D4-S.0-Z4 | 7/16 | 7/16 | 1-1/2 | 6 | 4 | TiAlN |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- C430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- General Purpose

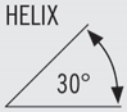
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N55694 | C430-0.438-D5-S.0-Z4 | 7/16 | 7/16 | 2 | 4 | 4 | |
| N55820 | C430-0.438-D5-S.0-Z4 | 7/16 | 7/16 | 2 | 4 | 4 | TiAlN |
| N85700 | C430-0.438-D6-S.0-Z4 | 7/16 | 7/16 | 2 | 4-1/2 | 4 | |
| N85736 | C430-0.438-D6-S.0-Z4 | 7/16 | 7/16 | 2 | 4-1/2 | 4 | TiAlN |
| N85701 | C430-0.438-D7-S.0-Z4 | 7/16 | 7/16 | 3 | 6 | 4 | |
| N85737 | C430-0.438-D7-S.0-Z4 | 7/16 | 7/16 | 3 | 6 | 4 | TiAlN |
| N85532 | C430-0.469-F2-S.0-Z4 | 15/32 | 1/2 | 1 | 3 | 4 | |
| N85608 | C430-0.469-F2-S.0-Z4 | 15/32 | 1/2 | 1 | 3 | 4 | TiAlN |
| N85662 | C430-0.500-D1-S.0-Z4 | 1/2 | 1/2 | 5/8 | 2-1/2 | 4 | |
| N85688 | C430-0.500-D1-S.0-Z4 | 1/2 | 1/2 | 5/8 | 2-1/2 | 4 | TiAlN |
| N85534 | C430-0.500-D2-S.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | |
| N85610 | C430-0.500-D2-S.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiAlN |
| N55695 | C430-0.500-D3-S.0-Z4 | 1/2 | 1/2 | 1 | 4 | 4 | |
| N55821 | C430-0.500-D3-S.0-Z4 | 1/2 | 1/2 | 1 | 4 | 4 | TiAlN |
| N55696 | C430-0.500-D4-S.0-Z4 | 1/2 | 1/2 | 1-1/2 | 6 | 4 | |
| N55822 | C430-0.500-D4-S.0-Z4 | 1/2 | 1/2 | 1-1/2 | 6 | 4 | TiAlN |
| N55697 | C430-0.500-D5-S.0-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | |
| N55823 | C430-0.500-D5-S.0-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiAlN |
| N85702 | C430-0.500-D6-S.0-Z4 | 1/2 | 1/2 | 2 | 4-1/2 | 4 | |
| N85738 | C430-0.500-D6-S.0-Z4 | 1/2 | 1/2 | 2 | 4-1/2 | 4 | TiAlN |
| N85703 | C430-0.500-D7-S.0-Z4 | 1/2 | 1/2 | 3 | 6 | 4 | |
| N85739 | C430-0.500-D7-S.0-Z4 | 1/2 | 1/2 | 3 | 6 | 4 | TiAlN |
| N85535 | C430-0.563-D2-S.0-Z4 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 4 | |
| N85611 | C430-0.563-D2-S.0-Z4 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 4 | TiAlN |
| N85663 | C430-0.625-D1-S.0-Z4 | 5/8 | 5/8 | 3/4 | 3 | 4 | |
| N85689 | C430-0.625-D1-S.0-Z4 | 5/8 | 5/8 | 3/4 | 3 | 4 | TiAlN |
| N85536 | C430-0.625-D2-S.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | |
| N85612 | C430-0.625-D2-S.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | TiAlN |
| N55700 | C430-0.625-D3-S.0-Z4 | 5/8 | 5/8 | 2 | 6 | 4 | |
| N55826 | C430-0.625-D3-S.0-Z4 | 5/8 | 5/8 | 2 | 6 | 4 | TiAlN |
| N85704 | C430-0.625-D4-S.0-Z4 | 5/8 | 5/8 | 2-1/4 | 5 | 4 | |
| N85740 | C430-0.625-D4-S.0-Z4 | 5/8 | 5/8 | 2-1/4 | 5 | 4 | TiAlN |
| N85705 | C430-0.625-D5-S.0-Z4 | 5/8 | 5/8 | 3 | 6 | 4 | |
| N85741 | C430-0.625-D5-S.0-Z4 | 5/8 | 5/8 | 3 | 6 | 4 | TiAlN |
| N85537 | C430-0.688-F2-S.0-Z4 | 11/16 | 3/4 | 1-3/8 | 4 | 4 | |
| N85613 | C430-0.688-F2-S.0-Z4 | 11/16 | 3/4 | 1-3/8 | 4 | 4 | TiAlN |
| N85664 | C430-0.750-D1-S.0-Z4 | 3/4 | 3/4 | 1 | 3 | 4 | |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- C430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

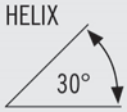
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85690 | C430-0.750-D1-S.0-Z4 | 3/4 | 3/4 | 1 | 3 | 4 | TiAlN |
| N85538 | C430-0.750-D2-S.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | |
| N85614 | C430-0.750-D2-S.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | TiAlN |
| N55701 | C430-0.750-D3-S.0-Z4 | 3/4 | 3/4 | 2 | 6 | 4 | |
| N55827 | C430-0.750-D3-S.0-Z4 | 3/4 | 3/4 | 2 | 6 | 4 | TiAlN |
| N85706 | C430-0.750-D4-S.0-Z4 | 3/4 | 3/4 | 2-1/4 | 5 | 4 | |
| N85742 | C430-0.750-D4-S.0-Z4 | 3/4 | 3/4 | 2-1/4 | 5 | 4 | TiAlN |
| N85707 | C430-0.750-D5-S.0-Z4 | 3/4 | 3/4 | 3 | 6 | 4 | |
| N85743 | C430-0.750-D5-S.0-Z4 | 3/4 | 3/4 | 3 | 6 | 4 | TiAlN |
| N55702 | C430-0.750-D6-S.0-Z4 | 3/4 | 3/4 | 4 | 6 | 4 | |
| N55828 | C430-0.750-D6-S.0-Z4 | 3/4 | 3/4 | 4 | 6 | 4 | TiAlN |
| N85539 | C430-0.875-D2-S.0-Z4 | 7/8 | 7/8 | 1-1/2 | 4 | 4 | |
| N85615 | C430-0.875-D2-S.0-Z4 | 7/8 | 7/8 | 1-1/2 | 4 | 4 | TiAlN |
| N55703 | C430-1.000-D1-S.0-Z4 | 1 | 1 | 1 | 3 | 4 | |
| N55829 | C430-1.000-D1-S.0-Z4 | 1 | 1 | 1 | 3 | 4 | TiAlN |
| N85540 | C430-1.000-D2-S.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | |
| N85616 | C430-1.000-D2-S.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | TiAlN |
| N55704 | C430-1.000-D3-S.0-Z4 | 1 | 1 | 2 | 6 | 4 | |
| N55830 | C430-1.000-D3-S.0-Z4 | 1 | 1 | 2 | 6 | 4 | TiAlN |
| N85708 | C430-1.000-D4-S.0-Z4 | 1 | 1 | 2-1/4 | 5 | 4 | |
| N85744 | C430-1.000-D4-S.0-Z4 | 1 | 1 | 2-1/4 | 5 | 4 | TiAlN |
| N85709 | C430-1.000-D5-S.0-Z4 | 1 | 1 | 3 | 6 | 4 | |
| N85745 | C430-1.000-D5-S.0-Z4 | 1 | 1 | 3 | 6 | 4 | TiAlN |
| N55705 | C430-1.000-D6-S.0-Z4 | 1 | 1 | 4 | 7 | 4 | |
| N55831 | C430-1.000-D6-S.0-Z4 | 1 | 1 | 4 | 7 | 4 | TiAlN |
| N55706 | C430-1.250-D2-S.0-Z4 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 4 | |
| N55832 | C430-1.250-D2-S.0-Z4 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 4 | TiAlN |
| N55707 | C430-1.250-D3-S.0-Z4 | 1-1/4 | 1-1/4 | 3 | 6 | 4 | |
| N55833 | C430-1.250-D3-S.0-Z4 | 1-1/4 | 1-1/4 | 3 | 6 | 4 | TiAlN |

# GENERAL PURPOSE- C430R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- General Purpose

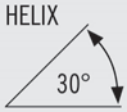
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N91372 | C430R-0.125-D4-R015.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | TiAlN | 0.015 |
| N91373 | C430R-0.125-D4-R020.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | TiAlN | 0.020 |
| N91374 | C430R-0.125-D4-R030.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | TiAlN | 0.030 |
| N91375 | C430R-0.188-D3-R015.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | TiAlN | 0.015 |
| N91376 | C430R-0.188-D3-R020.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | TiAlN | 0.020 |
| N91377 | C430R-0.188-D3-R030.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | TiAlN | 0.030 |
| N91378 | C430R-0.250-D3-R015.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | TiAlN | 0.015 |
| N91379 | C430R-0.250-D3-R020.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | TiAlN | 0.020 |
| N91380 | C430R-0.250-D3-R030.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | TiAlN | 0.030 |
| N91381 | C430R-0.250-D3-R045.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | TiAlN | 0.045 |
| N91382 | C430R-0.313-D3-R015.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | TiAlN | 0.015 |
| N91383 | C430R-0.313-D3-R020.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | TiAlN | 0.020 |
| N91384 | C430R-0.313-D3-R030.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | TiAlN | 0.030 |
| N91385 | C430R-0.313-D3-R045.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | TiAlN | 0.045 |
| N91386 | C430R-0.375-D3-R015.0-Z4 | 3/8 | 3/8 | 1 | 2-1/2 | 4 | TiAlN | 0.015 |
| N91387 | C430R-0.375-D3-R020.0-Z4 | 3/8 | 3/8 | 1 | 2-1/2 | 4 | TiAlN | 0.020 |
| N91389 | C430R-0.375-D3-R030.0-Z4 | 3/8 | 3/8 | 1 | 2-1/2 | 4 | TiAlN | 0.030 |
| N91390 | C430R-0.375-D3-R045.0-Z4 | 3/8 | 3/8 | 1 | 2-1/2 | 4 | TiAlN | 0.045 |
| N91391 | C430R-0.438-D2-R015.0-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | TiAlN | 0.015 |
| N91392 | C430R-0.438-D2-R020.0-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | TiAlN | 0.020 |
| N91393 | C430R-0.438-D2-R030.0-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | TiAlN | 0.030 |
| N91394 | C430R-0.438-D2-R045.0-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | TiAlN | 0.045 |
| N91395 | C430R-0.438-D2-R060.0-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | TiAlN | 0.060 |
| N91396 | C430R-0.438-D2-R090.0-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | TiAlN | 0.090 |
| N91397 | C430R-0.438-D2-R125.0-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | TiAlN | 0.125 |
| N91353 | C430R-0.500-D2-R015.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiAlN | 0.015 |
| N91398 | C430R-0.500-D2-R020.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiAlN | 0.020 |
| N91399 | C430R-0.500-D2-R030.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiAlN | 0.030 |
| N91401 | C430R-0.500-D2-R045.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiAlN | 0.045 |
| N91402 | C430R-0.500-D2-R060.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiAlN | 0.060 |
| N91403 | C430R-0.500-D2-R090.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiAlN | 0.090 |
| N91404 | C430R-0.500-D2-R125.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiAlN | 0.125 |
| N91406 | C430R-0.625-D2-R015.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | TiAlN | 0.015 |
| N91408 | C430R-0.625-D2-R020.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | TiAlN | 0.020 |
| N91409 | C430R-0.625-D2-R030.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | TiAlN | 0.030 |
| N91410 | C430R-0.625-D2-R045.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | TiAlN | 0.045 |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- C430R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

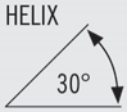
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N91411 | C430R-0.625-D2-R060.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | TiAlN | 0.060 |
| N91412 | C430R-0.625-D2-R090.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | TiAlN | 0.090 |
| N91413 | C430R-0.625-D2-R125.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | TiAlN | 0.125 |
| N91361 | C430R-0.750-D2-R015.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | TiAlN | 0.015 |
| N91415 | C430R-0.750-D2-R020.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | TiAlN | 0.020 |
| N91416 | C430R-0.750-D2-R030.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | TiAlN | 0.030 |
| N91417 | C430R-0.750-D2-R045.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | TiAlN | 0.045 |
| N91418 | C430R-0.750-D2-R060.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | TiAlN | 0.060 |
| N91419 | C430R-0.750-D2-R090.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | TiAlN | 0.090 |
| N91420 | C430R-0.750-D2-R125.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | TiAlN | 0.125 |
| N91421 | C430R-0.750-D2-R190.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | TiAlN | 0.190 |
| N91422 | C430R-1.000-D2-R015.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | TiAlN | 0.015 |
| N91423 | C430R-1.000-D2-R020.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | TiAlN | 0.020 |
| N91405 | C430R-1.000-D2-R030.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | TiAlN | 0.030 |
| N91424 | C430R-1.000-D2-R045.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | TiAlN | 0.045 |
| N91425 | C430R-1.000-D2-R060.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | TiAlN | 0.060 |
| N91426 | C430R-1.000-D2-R090.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | TiAlN | 0.090 |
| N91427 | C430R-1.000-D2-R125.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | TiAlN | 0.125 |
| N91428 | C430R-1.000-D2-R190.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | TiAlN | 0.190 |

# GENERAL PURPOSE- CNC430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

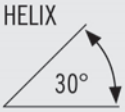
- Weldon flat standard on shank sizes - 3/8", 1/2", 5/8", 3/4" and 1"
- NC Tolerance (see page 388 for details)
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|
| N85833 | CNC430-0.125-D4-S.0-Z4 | 1/8 | 1/8 | 1/2 | 4 | |
| N85861 | CNC430-0.125-D4-S.0-Z4 | 1/8 | 1/8 | 1/2 | 4 | TiAlN |
| N85834 | CNC430-0.156-F4-S.0-Z4 | 5/32 | 3/16 | 9/16 | 4 | |
| N85862 | CNC430-0.156-F4-S.0-Z4 | 5/32 | 3/16 | 9/16 | 4 | TiAlN |
| N85835 | CNC430-0.188-D3-S.0-Z4 | 3/16 | 3/16 | 5/8 | 4 | |
| N85863 | CNC430-0.188-D3-S.0-Z4 | 3/16 | 3/16 | 5/8 | 4 | TiAlN |
| N85837 | CNC430-0.250-D3-S.0-Z4 | 1/4 | 1/4 | 3/4 | 4 | |
| N85865 | CNC430-0.250-D3-S.0-Z4 | 1/4 | 1/4 | 3/4 | 4 | TiAlN |
| N85839 | CNC430-0.313-D3-S.0-Z4 | 5/16 | 5/16 | 13/16 | 4 | |
| N85867 | CNC430-0.313-D3-S.0-Z4 | 5/16 | 5/16 | 13/16 | 4 | TiAlN |
| N85840 | CNC430-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 7/8 | 4 | |
| N85868 | CNC430-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 7/8 | 4 | TiAlN |
| N85842 | CNC430-0.500-D2-S.3-Z4 | 1/2 | 1/2 | 1 | 4 | |
| N85870 | CNC430-0.500-D2-S.3-Z4 | 1/2 | 1/2 | 1 | 4 | TiAlN |
| N85844 | CNC430-0.625-D2-S.3-Z4 | 5/8 | 5/8 | 1-1/4 | 4 | |
| N85872 | CNC430-0.625-D2-S.3-Z4 | 5/8 | 5/8 | 1-1/4 | 4 | TiAlN |
| N85845 | CNC430-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | |
| N85873 | CNC430-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | TiAlN |
| N85846 | CNC430-1.000-D2-S.3-Z4 | 1 | 1 | 1-1/2 | 4 | |
| N85874 | CNC430-1.000-D2-S.3-Z4 | 1 | 1 | 1-1/2 | 4 | TiAlN |

# GENERAL PURPOSE- CD430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

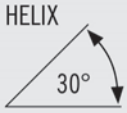
- Weldon flat standard
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85618 | CD430-0.125-XF3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 3-1/16 | 4 | |
| N85640 | CD430-0.125-XF3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 3-1/16 | 4 | TiAlN |
| N85619 | CD430-0.156-XF3-S.3-Z4 | 5/32 | 3/8 | 7/16 | 3-1/8 | 4 | |
| N85641 | CD430-0.156-XF3-S.3-Z4 | 5/32 | 3/8 | 7/16 | 3-1/8 | 4 | TiAlN |
| N85620 | CD430-0.188-XF3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 3-1/4 | 4 | |
| N85642 | CD430-0.188-XF3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 3-1/4 | 4 | TiAlN |
| N85621 | CD430-0.219-XF3-S.3-Z4 | 7/32 | 3/8 | 9/16 | 3-3/8 | 4 | |
| N85643 | CD430-0.219-XF3-S.3-Z4 | 7/32 | 3/8 | 9/16 | 3-3/8 | 4 | TiAlN |
| N85622 | CD430-0.250-XF3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 3-3/8 | 4 | |
| N85644 | CD430-0.250-XF3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 3-3/8 | 4 | TiAlN |
| N85623 | CD430-0.281-XF2-S.3-Z4 | 9/32 | 3/8 | 11/16 | 3-1/2 | 4 | |
| N85645 | CD430-0.281-XF2-S.3-Z4 | 9/32 | 3/8 | 11/16 | 3-1/2 | 4 | TiAlN |
| N85624 | CD430-0.313-XF2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N85646 | CD430-0.313-XF2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 3-1/2 | 4 | TiAlN |
| N85625 | CD430-0.344-XF2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N85647 | CD430-0.344-XF2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 3-1/2 | 4 | TiAlN |
| N85626 | CD430-0.375-XD2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N85648 | CD430-0.375-XD2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 3-1/2 | 4 | TiAlN |
| N85627 | CD430-0.438-XF2-S.3-Z4 | 7/16 | 1/2 | 7/8 | 4 | 4 | |
| N85649 | CD430-0.438-XF2-S.3-Z4 | 7/16 | 1/2 | 7/8 | 4 | 4 | TiAlN |
| N85628 | CD430-0.500-XD2-S.3-Z4 | 1/2 | 1/2 | 1 | 4 | 4 | |
| N85650 | CD430-0.500-XD2-S.3-Z4 | 1/2 | 1/2 | 1 | 4 | 4 | TiAlN |

# GENERAL PURPOSE- CSD430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- General Purpose

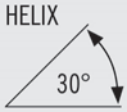
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N89818 | CSD430-0.031-XF2-S.0-Z4 | 1/32 | 1/8 | 1/16 | 1-1/2 | 4 | |
| N89821 | CSD430-0.031-XF2-S.0-Z4 | 1/32 | 1/8 | 1/16 | 1-1/2 | 4 | TiAlN |
| N89822 | CSD430-0.047-XF2-S.0-Z4 | 3/64 | 1/8 | 3/32 | 1-1/2 | 4 | |
| N89825 | CSD430-0.047-XF2-S.0-Z4 | 3/64 | 1/8 | 3/32 | 1-1/2 | 4 | TiAlN |
| N89826 | CSD430-0.063-XF2-S.0-Z4 | 1/16 | 1/8 | 1/8 | 1-1/2 | 4 | |
| N89829 | CSD430-0.063-XF2-S.0-Z4 | 1/16 | 1/8 | 1/8 | 1-1/2 | 4 | TiAlN |
| N89830 | CSD430-0.078-XF2-S.0-Z4 | 5/64 | 1/8 | 1/8 | 1-1/2 | 4 | |
| N89833 | CSD430-0.078-XF2-S.0-Z4 | 5/64 | 1/8 | 1/8 | 1-1/2 | 4 | TiAlN |
| N89834 | CSD430-0.094-XF2-S.0-Z4 | 3/32 | 1/8 | 3/16 | 1-1/2 | 4 | |
| N89837 | CSD430-0.094-XF2-S.0-Z4 | 3/32 | 1/8 | 3/16 | 1-1/2 | 4 | TiAlN |
| N89838 | CSD430-0.109-XF2-S.0-Z4 | 7/64 | 1/8 | 3/16 | 1-1/2 | 4 | |
| N89841 | CSD430-0.109-XF2-S.0-Z4 | 7/64 | 1/8 | 3/16 | 1-1/2 | 4 | TiAlN |
| N89842 | CSD430-0.125-XD2-S.0-Z4 | 1/8 | 1/8 | 1/4 | 1-1/2 | 4 | |
| N89845 | CSD430-0.125-XD2-S.0-Z4 | 1/8 | 1/8 | 1/4 | 1-1/2 | 4 | TiAlN |
| N89846 | CSD430-0.141-XF2-S.0-Z4 | 9/64 | 3/16 | 5/16 | 2 | 4 | |
| N89849 | CSD430-0.141-XF2-S.0-Z4 | 9/64 | 3/16 | 5/16 | 2 | 4 | TiAlN |
| N89850 | CSD430-0.156-XF2-S.0-Z4 | 5/32 | 3/16 | 5/16 | 2 | 4 | |
| N89853 | CSD430-0.156-XF2-S.0-Z4 | 5/32 | 3/16 | 5/16 | 2 | 4 | TiAlN |
| N89854 | CSD430-0.172-XF2-S.0-Z4 | 11/64 | 3/16 | 5/16 | 2 | 4 | |
| N89857 | CSD430-0.172-XF2-S.0-Z4 | 11/64 | 3/16 | 5/16 | 2 | 4 | TiAlN |
| N89858 | CSD430-0.188-XD2-S.0-Z4 | 3/16 | 3/16 | 3/8 | 2 | 4 | |
| N89861 | CSD430-0.188-XD2-S.0-Z4 | 3/16 | 3/16 | 3/8 | 2 | 4 | TiAlN |
| N89862 | CSD430-0.203-XF2-S.0-Z4 | 13/64 | 1/4 | 1/2 | 2-1/2 | 4 | |
| N89865 | CSD430-0.203-XF2-S.0-Z4 | 13/64 | 1/4 | 1/2 | 2-1/2 | 4 | TiAlN |
| N89866 | CSD430-0.219-XF2-S.0-Z4 | 7/32 | 1/4 | 1/2 | 2-1/2 | 4 | |
| N89869 | CSD430-0.219-XF2-S.0-Z4 | 7/32 | 1/4 | 1/2 | 2-1/2 | 4 | TiAlN |
| N89870 | CSD430-0.234-XF2-S.0-Z4 | 15/64 | 1/4 | 1/2 | 2-1/2 | 4 | |
| N89873 | CSD430-0.234-XF2-S.0-Z4 | 15/64 | 1/4 | 1/2 | 2-1/2 | 4 | TiAlN |
| N89874 | CSD430-0.250-XD2-S.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | |
| N89877 | CSD430-0.250-XD2-S.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | TiAlN |
| N89878 | CSD430-0.281-XF2-S.0-Z4 | 9/32 | 5/16 | 1/2 | 2-1/2 | 4 | |
| N89881 | CSD430-0.281-XF2-S.0-Z4 | 9/32 | 5/16 | 1/2 | 2-1/2 | 4 | TiAlN |
| N89882 | CSD430-0.313-XD2-S.0-Z4 | 5/16 | 5/16 | 1/2 | 2-1/2 | 4 | |
| N89885 | CSD430-0.313-XD2-S.0-Z4 | 5/16 | 5/16 | 1/2 | 2-1/2 | 4 | TiAlN |
| N89886 | CSD430-0.344-XF2-S.0-Z4 | 11/32 | 3/8 | 9/16 | 2-1/2 | 4 | |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- CSD430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

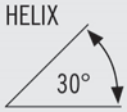
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N89889 | CSD430-0.344-XF2-S.0-Z4 | 11/32 | 3/8 | 9/16 | 2-1/2 | 4 | TiAlN |
| N89890 | CSD430-0.375-XD2-S.0-Z4 | 3/8 | 3/8 | 9/16 | 2-1/2 | 4 | |
| N89893 | CSD430-0.375-XD2-S.0-Z4 | 3/8 | 3/8 | 9/16 | 2-1/2 | 4 | TiAlN |
| N89894 | CSD430-0.438-XD1-S.0-Z4 | 7/16 | 7/16 | 9/16 | 2-3/4 | 4 | |
| N89897 | CSD430-0.438-XD1-S.0-Z4 | 7/16 | 7/16 | 9/16 | 2-3/4 | 4 | TiAlN |
| N89898 | CSD430-0.500-XD1-S.0-Z4 | 1/2 | 1/2 | 5/8 | 3 | 4 | |
| N89901 | CSD430-0.500-XD1-S.0-Z4 | 1/2 | 1/2 | 5/8 | 3 | 4 | TiAlN |

# GENERAL PURPOSE- CB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N86264 | CB430-0.016-F2-B.0-Z4 | 1/64 | 1/8 | 1/32 | 1-1/2 | 4 | |
| N86340 | CB430-0.016-F2-B.0-Z4 | 1/64 | 1/8 | 1/32 | 1-1/2 | 4 | TiAlN |
| N86265 | CB430-0.031-F3-B.0-Z4 | 1/32 | 1/8 | 5/64 | 1-1/2 | 4 | |
| N86341 | CB430-0.031-F3-B.0-Z4 | 1/32 | 1/8 | 5/64 | 1-1/2 | 4 | TiAlN |
| N55834 | CB430-0.031-F4-B.0-Z4 | 1/32 | 1/8 | 3/32 | 1-1/2 | 4 | |
| N56014 | CB430-0.031-F4-B.0-Z4 | 1/32 | 1/8 | 3/32 | 1-1/2 | 4 | TiAlN |
| N86266 | CB430-0.047-F2-B.0-Z4 | 3/64 | 1/8 | 7/64 | 1-1/2 | 4 | |
| N86342 | CB430-0.047-F2-B.0-Z4 | 3/64 | 1/8 | 7/64 | 1-1/2 | 4 | TiAlN |
| N55835 | CB430-0.047-F3-B.0-Z4 | 3/64 | 1/8 | 1/8 | 1-1/2 | 4 | |
| N56015 | CB430-0.047-F3-B.0-Z4 | 3/64 | 1/8 | 1/8 | 1-1/2 | 4 | TiAlN |
| N55836 | CB430-0.063-F2-B.0-Z4 | 1/16 | 1/8 | 1/8 | 1-1/2 | 4 | |
| N56016 | CB430-0.063-F2-B.0-Z4 | 1/16 | 1/8 | 1/8 | 1-1/2 | 4 | TiAlN |
| N86267 | CB430-0.063-F3-B.0-Z4 | 1/16 | 1/8 | 3/16 | 1-1/2 | 4 | |
| N86343 | CB430-0.063-F3-B.0-Z4 | 1/16 | 1/8 | 3/16 | 1-1/2 | 4 | TiAlN |
| N55837 | CB430-0.063-F4-B.0-Z4 | 1/16 | 1/8 | 1/4 | 1-1/2 | 4 | |
| N56017 | CB430-0.063-F4-B.0-Z4 | 1/16 | 1/8 | 1/4 | 1-1/2 | 4 | TiAlN |
| N55838 | CB430-0.063-F8-B.0-Z4 | 1/16 | 1/8 | 1 | 3 | 4 | |
| N56018 | CB430-0.063-F8-B.0-Z4 | 1/16 | 1/8 | 1 | 3 | 4 | TiAlN |
| N86268 | CB430-0.078-F2-B.0-Z4 | 5/64 | 1/8 | 3/16 | 1-1/2 | 4 | |
| N86344 | CB430-0.078-F2-B.0-Z4 | 5/64 | 1/8 | 3/16 | 1-1/2 | 4 | TiAlN |
| N55840 | CB430-0.078-F3-B.0-Z4 | 5/64 | 1/8 | 1/4 | 1-1/2 | 4 | |
| N56020 | CB430-0.078-F3-B.0-Z4 | 5/64 | 1/8 | 1/4 | 1-1/2 | 4 | TiAlN |
| N55841 | CB430-0.094-F2-B.0-Z4 | 3/32 | 1/8 | 3/16 | 1-1/2 | 4 | |
| N56021 | CB430-0.094-F2-B.0-Z4 | 3/32 | 1/8 | 3/16 | 1-1/2 | 4 | TiAlN |
| N86269 | CB430-0.094-F3-B.0-Z4 | 3/32 | 1/8 | 9/32 | 1-1/2 | 4 | |
| N86345 | CB430-0.094-F3-B.0-Z4 | 3/32 | 1/8 | 9/32 | 1-1/2 | 4 | TiAlN |
| N55842 | CB430-0.094-F4-B.0-Z4 | 3/32 | 1/8 | 3/8 | 1-1/2 | 4 | |
| N56022 | CB430-0.094-F4-B.0-Z4 | 3/32 | 1/8 | 3/8 | 1-1/2 | 4 | TiAlN |
| N55843 | CB430-0.094-F8-B.0-Z4 | 3/32 | 1/8 | 1 | 3 | 4 | |
| N56023 | CB430-0.094-F8-B.0-Z4 | 3/32 | 1/8 | 1 | 3 | 4 | TiAlN |
| N86270 | CB430-0.109-F3-B.0-Z4 | 7/64 | 1/8 | 3/8 | 1-1/2 | 4 | |
| N86346 | CB430-0.109-F3-B.0-Z4 | 7/64 | 1/8 | 3/8 | 1-1/2 | 4 | TiAlN |
| N55845 | CB430-0.125-D2-B.0-Z4 | 1/8 | 1/8 | 1/4 | 1-1/2 | 4 | |
| N56025 | CB430-0.125-D2-B.0-Z4 | 1/8 | 1/8 | 1/4 | 1-1/2 | 4 | TiAlN |
| N86271 | CB430-0.125-D4-B.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | |
| N86347 | CB430-0.125-D4-B.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | TiAlN |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- CB430

SOLID CARBIDE

HELIX 30°

BALL END

CENTER CUTTING

- General Purpose

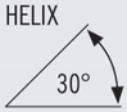
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N55846 | CB430-0.125-D5-B.0-Z4 | 1/8 | 1/8 | 5/8 | 2 | 4 | |
| N56026 | CB430-0.125-D5-B.0-Z4 | 1/8 | 1/8 | 5/8 | 2 | 4 | TiAlN |
| N55847 | CB430-0.125-D6-B.0-Z4 | 1/8 | 1/8 | 3/4 | 3 | 4 | |
| N56027 | CB430-0.125-D6-B.0-Z4 | 1/8 | 1/8 | 3/4 | 3 | 4 | TiAlN |
| N55848 | CB430-0.125-D7-B.0-Z4 | 1/8 | 1/8 | 1 | 3 | 4 | |
| N56028 | CB430-0.125-D7-B.0-Z4 | 1/8 | 1/8 | 1 | 3 | 4 | TiAlN |
| N55849 | CB430-0.125-D8-B.0-Z4 | 1/8 | 1/8 | 1 | 4 | 4 | |
| N56029 | CB430-0.125-D8-B.0-Z4 | 1/8 | 1/8 | 1 | 4 | 4 | TiAlN |
| N86272 | CB430-0.141-F4-B.0-Z4 | 9/64 | 3/16 | 1/2 | 2 | 4 | |
| N86348 | CB430-0.141-F4-B.0-Z4 | 9/64 | 3/16 | 1/2 | 2 | 4 | TiAlN |
| N55850 | CB430-0.156-F2-B.0-Z4 | 5/32 | 3/16 | 5/16 | 2 | 4 | |
| N56030 | CB430-0.156-F2-B.0-Z4 | 5/32 | 3/16 | 5/16 | 2 | 4 | TiAlN |
| N86273 | CB430-0.156-F3-B.0-Z4 | 5/32 | 3/16 | 1/2 | 2 | 4 | |
| N86349 | CB430-0.156-F3-B.0-Z4 | 5/32 | 3/16 | 1/2 | 2 | 4 | TiAlN |
| N86274 | CB430-0.172-F4-B.0-Z4 | 11/64 | 3/16 | 5/8 | 2 | 4 | |
| N86350 | CB430-0.172-F4-B.0-Z4 | 11/64 | 3/16 | 5/8 | 2 | 4 | TiAlN |
| N55851 | CB430-0.188-D2-B.0-Z4 | 3/16 | 3/16 | 3/8 | 2 | 4 | |
| N56031 | CB430-0.188-D2-B.0-Z4 | 3/16 | 3/16 | 3/8 | 2 | 4 | TiAlN |
| N86275 | CB430-0.188-D3-B.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | |
| N86351 | CB430-0.188-D3-B.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | TiAlN |
| N55852 | CB430-0.188-D4-B.0-Z4 | 3/16 | 3/16 | 1 | 3 | 4 | |
| N56032 | CB430-0.188-D4-B.0-Z4 | 3/16 | 3/16 | 1 | 3 | 4 | TiAlN |
| N55853 | CB430-0.188-D5-B.0-Z4 | 3/16 | 3/16 | 1 | 4 | 4 | |
| N56033 | CB430-0.188-D5-B.0-Z4 | 3/16 | 3/16 | 1 | 4 | 4 | TiAlN |
| N55854 | CB430-0.188-D6-B.0-Z4 | 3/16 | 3/16 | 1-1/8 | 3 | 4 | |
| N53972 | CB430-0.188-D6-B.0-Z4 | 3/16 | 3/16 | 1-1/8 | 3 | 4 | TiAlN |
| N86276 | CB430-0.203-F3-B.0-Z4 | 13/64 | 1/4 | 5/8 | 2-1/2 | 4 | |
| N86352 | CB430-0.203-F3-B.0-Z4 | 13/64 | 1/4 | 5/8 | 2-1/2 | 4 | TiAlN |
| N86277 | CB430-0.219-F3-B.0-Z4 | 7/32 | 1/4 | 5/8 | 2-1/2 | 4 | |
| N86353 | CB430-0.219-F3-B.0-Z4 | 7/32 | 1/4 | 5/8 | 2-1/2 | 4 | TiAlN |
| N86278 | CB430-0.234-F3-B.0-Z4 | 15/64 | 1/4 | 3/4 | 2-1/2 | 4 | |
| N86354 | CB430-0.234-F3-B.0-Z4 | 15/64 | 1/4 | 3/4 | 2-1/2 | 4 | TiAlN |
| N55856 | CB430-0.250-D2-B.0-Z4 | 1/4 | 1/4 | 1/2 | 2 | 4 | |
| N53974 | CB430-0.250-D2-B.0-Z4 | 1/4 | 1/4 | 1/2 | 2 | 4 | TiAlN |
| N86279 | CB430-0.250-D3-B.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | |
| N86355 | CB430-0.250-D3-B.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | TiAlN |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- CB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- General Purpose

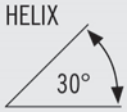
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N55857 | CB430-0.250-D4-B.0-Z4 | 1/4 | 1/4 | 1 | 3 | 4 | |
| N53975 | CB430-0.250-D4-B.0-Z4 | 1/4 | 1/4 | 1 | 3 | 4 | TiAlN |
| N55858 | CB430-0.250-D5-B.0-Z4 | 1/4 | 1/4 | 1 | 4 | 4 | |
| N53976 | CB430-0.250-D5-B.0-Z4 | 1/4 | 1/4 | 1 | 4 | 4 | TiAlN |
| N55859 | CB430-0.250-D6-B.0-Z4 | 1/4 | 1/4 | 1-1/2 | 4 | 4 | |
| N53977 | CB430-0.250-D6-B.0-Z4 | 1/4 | 1/4 | 1-1/2 | 4 | 4 | TiAlN |
| N55860 | CB430-0.250-D7-B.0-Z4 | 1/4 | 1/4 | 1-1/2 | 6 | 4 | |
| N53978 | CB430-0.250-D7-B.0-Z4 | 1/4 | 1/4 | 1-1/2 | 6 | 4 | TiAlN |
| N86281 | CB430-0.281-F3-B.0-Z4 | 9/32 | 5/16 | 3/4 | 2-1/2 | 4 | |
| N86357 | CB430-0.281-F3-B.0-Z4 | 9/32 | 5/16 | 3/4 | 2-1/2 | 4 | TiAlN |
| N55861 | CB430-0.313-D2-B.0-Z4 | 5/16 | 5/16 | 1/2 | 2 | 4 | |
| N53979 | CB430-0.313-D2-B.0-Z4 | 5/16 | 5/16 | 1/2 | 2 | 4 | TiAlN |
| N86283 | CB430-0.313-D3-B.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | |
| N86359 | CB430-0.313-D3-B.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | TiAlN |
| N55862 | CB430-0.313-D4-B.0-Z4 | 5/16 | 5/16 | 1 | 3 | 4 | |
| N53980 | CB430-0.313-D4-B.0-Z4 | 5/16 | 5/16 | 1 | 3 | 4 | TiAlN |
| N55864 | CB430-0.313-D6-B.0-Z4 | 5/16 | 5/16 | 1-1/2 | 6 | 4 | |
| N53982 | CB430-0.313-D6-B.0-Z4 | 5/16 | 5/16 | 1-1/2 | 6 | 4 | TiAlN |
| N86284 | CB430-0.328-F3-B.0-Z4 | 21/64 | 3/8 | 1 | 2-1/2 | 4 | |
| N86360 | CB430-0.328-F3-B.0-Z4 | 21/64 | 3/8 | 1 | 2-1/2 | 4 | TiAlN |
| N86285 | CB430-0.344-F3-B.0-Z4 | 11/32 | 3/8 | 1 | 2-1/2 | 4 | |
| N86361 | CB430-0.344-F3-B.0-Z4 | 11/32 | 3/8 | 1 | 2-1/2 | 4 | TiAlN |
| N55866 | CB430-0.375-D2-B.0-Z4 | 3/8 | 3/8 | 5/8 | 2 | 4 | |
| N53984 | CB430-0.375-D2-B.0-Z4 | 3/8 | 3/8 | 5/8 | 2 | 4 | TiAlN |
| N86287 | CB430-0.375-D3-B.0-Z4 | 3/8 | 3/8 | 1 | 2-1/2 | 4 | |
| N86363 | CB430-0.375-D3-B.0-Z4 | 3/8 | 3/8 | 1 | 2-1/2 | 4 | TiAlN |
| N55867 | CB430-0.375-D4-B.0-Z4 | 3/8 | 3/8 | 1 | 3 | 4 | |
| N53985 | CB430-0.375-D4-B.0-Z4 | 3/8 | 3/8 | 1 | 3 | 4 | TiAlN |
| N55868 | CB430-0.375-D5-B.0-Z4 | 3/8 | 3/8 | 1 | 4 | 4 | |
| N53986 | CB430-0.375-D5-B.0-Z4 | 3/8 | 3/8 | 1 | 4 | 4 | TiAlN |
| N55869 | CB430-0.375-D6-B.0-Z4 | 3/8 | 3/8 | 1-1/2 | 6 | 4 | |
| N53987 | CB430-0.375-D6-B.0-Z4 | 3/8 | 3/8 | 1-1/2 | 6 | 4 | TiAlN |
| N55870 | CB430-0.375-D7-B.0-Z4 | 3/8 | 3/8 | 2 | 4 | 4 | |
| N53988 | CB430-0.375-D7-B.0-Z4 | 3/8 | 3/8 | 2 | 4 | 4 | TiAlN |
| N55871 | CB430-0.375-D8-B.0-Z4 | 3/8 | 3/8 | 3 | 6 | 4 | |
| N53989 | CB430-0.375-D8-B.0-Z4 | 3/8 | 3/8 | 3 | 6 | 4 | TiAlN |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- CB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- General Purpose

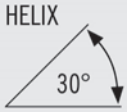
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N86289 | CB430-0.406-F2-B.0-Z4 | 13/32 | 7/16 | 1 | 2-3/4 | 4 | |
| N86365 | CB430-0.406-F2-B.0-Z4 | 13/32 | 7/16 | 1 | 2-3/4 | 4 | TiAlN |
| N86291 | CB430-0.438-D2-B.0-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | |
| N86367 | CB430-0.438-D2-B.0-Z4 | 7/16 | 7/16 | 1 | 2-3/4 | 4 | TiAlN |
| N55873 | CB430-0.438-D3-B.0-Z4 | 7/16 | 7/16 | 1 | 4 | 4 | |
| N53991 | CB430-0.438-D3-B.0-Z4 | 7/16 | 7/16 | 1 | 4 | 4 | TiAlN |
| N86293 | CB430-0.469-F2-B.0-Z4 | 15/32 | 1/2 | 1 | 3 | 4 | |
| N86369 | CB430-0.469-F2-B.0-Z4 | 15/32 | 1/2 | 1 | 3 | 4 | TiAlN |
| N55877 | CB430-0.500-D1-B.0-Z4 | 1/2 | 1/2 | 5/8 | 2-1/2 | 4 | |
| N53995 | CB430-0.500-D1-B.0-Z4 | 1/2 | 1/2 | 5/8 | 2-1/2 | 4 | TiAlN |
| N86295 | CB430-0.500-D2-B.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | |
| N86371 | CB430-0.500-D2-B.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiAlN |
| N55878 | CB430-0.500-D3-B.0-Z4 | 1/2 | 1/2 | 1 | 4 | 4 | |
| N53996 | CB430-0.500-D3-B.0-Z4 | 1/2 | 1/2 | 1 | 4 | 4 | TiAlN |
| N55879 | CB430-0.500-D4-B.0-Z4 | 1/2 | 1/2 | 1-1/2 | 6 | 4 | |
| N53997 | CB430-0.500-D4-B.0-Z4 | 1/2 | 1/2 | 1-1/2 | 6 | 4 | TiAlN |
| N55880 | CB430-0.500-D5-B.0-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | |
| N53998 | CB430-0.500-D5-B.0-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiAlN |
| N55881 | CB430-0.500-D6-B.0-Z4 | 1/2 | 1/2 | 3 | 6 | 4 | |
| N53999 | CB430-0.500-D6-B.0-Z4 | 1/2 | 1/2 | 3 | 6 | 4 | TiAlN |
| N86296 | CB430-0.563-D2-B.0-Z4 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 4 | |
| N86372 | CB430-0.563-D2-B.0-Z4 | 9/16 | 9/16 | 1-1/8 | 3-1/2 | 4 | TiAlN |
| N55884 | CB430-0.625-D1-B.0-Z4 | 5/8 | 5/8 | 3/4 | 3 | 4 | |
| N54002 | CB430-0.625-D1-B.0-Z4 | 5/8 | 5/8 | 3/4 | 3 | 4 | TiAlN |
| N86297 | CB430-0.625-D2-B.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | |
| N86373 | CB430-0.625-D2-B.0-Z4 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 4 | TiAlN |
| N55885 | CB430-0.625-D3-B.0-Z4 | 5/8 | 5/8 | 2 | 6 | 4 | |
| N54003 | CB430-0.625-D3-B.0-Z4 | 5/8 | 5/8 | 2 | 6 | 4 | TiAlN |
| N55886 | CB430-0.625-D5-B.0-Z4 | 5/8 | 5/8 | 3 | 6 | 4 | |
| N54004 | CB430-0.625-D5-B.0-Z4 | 5/8 | 5/8 | 3 | 6 | 4 | TiAlN |
| N55887 | CB430-0.750-D1-B.0-Z4 | 3/4 | 3/4 | 1 | 3 | 4 | |
| N54005 | CB430-0.750-D1-B.0-Z4 | 3/4 | 3/4 | 1 | 3 | 4 | TiAlN |
| N86299 | CB430-0.750-D2-B.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | |
| N86375 | CB430-0.750-D2-B.0-Z4 | 3/4 | 3/4 | 1-1/2 | 4 | 4 | TiAlN |
| N55888 | CB430-0.750-D3-B.0-Z4 | 3/4 | 3/4 | 2 | 6 | 4 | |
| N54006 | CB430-0.750-D3-B.0-Z4 | 3/4 | 3/4 | 2 | 6 | 4 | TiAlN |

**DISCOUNT CODE D42**

# GENERAL PURPOSE- CB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

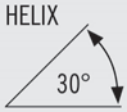
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N55889 | CB430-0.750-D4-B.0-Z4 | 3/4 | 3/4 | 3 | 6 | 4 | |
| N54007 | CB430-0.750-D4-B.0-Z4 | 3/4 | 3/4 | 3 | 6 | 4 | TiAlN |
| N55890 | CB430-0.750-D5-B.0-Z4 | 3/4 | 3/4 | 4 | 6 | 4 | |
| N54008 | CB430-0.750-D5-B.0-Z4 | 3/4 | 3/4 | 4 | 6 | 4 | TiAlN |
| N86300 | CB430-0.875-D2-B.0-Z4 | 7/8 | 7/8 | 1-1/2 | 4 | 4 | |
| N86376 | CB430-0.875-D2-B.0-Z4 | 7/8 | 7/8 | 1-1/2 | 4 | 4 | TiAlN |
| N86301 | CB430-1.000-D2-B.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | |
| N86377 | CB430-1.000-D2-B.0-Z4 | 1 | 1 | 1-1/2 | 4 | 4 | TiAlN |
| N55891 | CB430-1.000-D3-B.0-Z4 | 1 | 1 | 2 | 6 | 4 | |
| N54009 | CB430-1.000-D3-B.0-Z4 | 1 | 1 | 2 | 6 | 4 | TiAlN |
| N55892 | CB430-1.000-D4-B.0-Z4 | 1 | 1 | 3 | 6 | 4 | |
| N54010 | CB430-1.000-D4-B.0-Z4 | 1 | 1 | 3 | 6 | 4 | TiAlN |
| N55893 | CB430-1.000-D5-B.0-Z4 | 1 | 1 | 4 | 7 | 4 | |
| N54011 | CB430-1.000-D5-B.0-Z4 | 1 | 1 | 4 | 7 | 4 | TiAlN |

# GENERAL PURPOSE- CNCB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

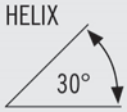
- Weldon flat standard on shank sizes - 3/8", 1/2", 5/8", 3/4" and 1"
- NC Tolerance (see page 388 for details)
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85876 | CNCB430-0.125-D4-B.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | |
| N85904 | CNCB430-0.125-D4-B.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | TiAlN |
| N85877 | CNCB430-0.156-F4-B.0-Z4 | 5/32 | 3/16 | 9/16 | 2 | 4 | |
| N85905 | CNCB430-0.156-F4-B.0-Z4 | 5/32 | 3/16 | 9/16 | 2 | 4 | TiAlN |
| N85878 | CNCB430-0.188-D3-B.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | |
| N85906 | CNCB430-0.188-D3-B.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | TiAlN |
| N85880 | CNCB430-0.250-D3-B.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | |
| N85908 | CNCB430-0.250-D3-B.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | TiAlN |
| N85882 | CNCB430-0.313-D3-B.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | |
| N85910 | CNCB430-0.313-D3-B.0-Z4 | 5/16 | 5/16 | 13/16 | 2-1/2 | 4 | TiAlN |
| N85883 | CNCB430-0.375-D2-B.3-Z4 | 3/8 | 3/5 | 7/8 | 2-1/2 | 4 | |
| N85911 | CNCB430-0.375-D2-B.3-Z4 | 3/8 | 3/5 | 7/8 | 2-1/2 | 4 | TiAlN |
| N85885 | CNCB430-0.500-D2-B.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | |
| N85913 | CNCB430-0.500-D2-B.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiAlN |

# GENERAL PURPOSE- CSDB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- General Purpose

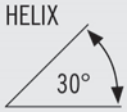
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N89902 | CSDB430-0.031-XF2-B.0-Z4 | 1/32 | 1/8 | 1/16 | 1-1/2 | 4 | |
| N89905 | CSDB430-0.031-XF2-B.0-Z4 | 1/32 | 1/8 | 1/16 | 1-1/2 | 4 | TiAlN |
| N89906 | CSDB430-0.047-XF2-B.0-Z4 | 3/64 | 1/8 | 3/32 | 1-1/2 | 4 | |
| N89909 | CSDB430-0.047-XF2-B.0-Z4 | 3/64 | 1/8 | 3/32 | 1-1/2 | 4 | TiAlN |
| N89910 | CSDB430-0.063-XF2-B.0-Z4 | 1/16 | 1/8 | 1/8 | 1-1/2 | 4 | |
| N89913 | CSDB430-0.063-XF2-B.0-Z4 | 1/16 | 1/8 | 1/8 | 1-1/2 | 4 | TiAlN |
| N89914 | CSDB430-0.078-XF2-B.0-Z4 | 5/64 | 1/8 | 1/8 | 1-1/2 | 4 | |
| N89917 | CSDB430-0.078-XF2-B.0-Z4 | 5/64 | 1/8 | 1/8 | 1-1/2 | 4 | TiAlN |
| N89918 | CSDB430-0.094-XF2-B.0-Z4 | 3/32 | 1/8 | 3/16 | 1-1/2 | 4 | |
| N89921 | CSDB430-0.094-XF2-B.0-Z4 | 3/32 | 1/8 | 3/16 | 1-1/2 | 4 | TiAlN |
| N89922 | CSDB430-0.109-XF2-B.0-Z4 | 7/64 | 1/8 | 3/16 | 1-1/2 | 4 | |
| N89925 | CSDB430-0.109-XF2-B.0-Z4 | 7/64 | 1/8 | 3/16 | 1-1/2 | 4 | TiAlN |
| N89926 | CSDB430-0.125-XD2-B.0-Z4 | 1/8 | 1/8 | 1/4 | 1-1/2 | 4 | |
| N89929 | CSDB430-0.125-XD2-B.0-Z4 | 1/8 | 1/8 | 1/4 | 1-1/2 | 4 | TiAlN |
| N89930 | CSDB430-0.141-XF2-B.0-Z4 | 9/64 | 3/16 | 5/16 | 2 | 4 | |
| N89933 | CSDB430-0.141-XF2-B.0-Z4 | 9/64 | 3/16 | 5/16 | 2 | 4 | TiAlN |
| N89934 | CSDB430-0.156-XF2-B.0-Z4 | 5/32 | 3/16 | 5/16 | 2 | 4 | |
| N89937 | CSDB430-0.156-XF2-B.0-Z4 | 5/32 | 3/16 | 5/16 | 2 | 4 | TiAlN |
| N89938 | CSDB430-0.172-XF2-B.0-Z4 | 11/64 | 3/16 | 5/16 | 2 | 4 | |
| N89941 | CSDB430-0.172-XF2-B.0-Z4 | 11/64 | 3/16 | 5/16 | 2 | 4 | TiAlN |
| N89942 | CSDB430-0.188-XD2-B.0-Z4 | 3/16 | 3/16 | 3/8 | 2 | 4 | |
| N89945 | CSDB430-0.188-XD2-B.0-Z4 | 3/16 | 3/16 | 3/8 | 2 | 4 | TiAlN |
| N89958 | CSDB430-0.250-XD2-B.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | |
| N89961 | CSDB430-0.250-XD2-B.0-Z4 | 1/4 | 1/4 | 1/2 | 2-1/2 | 4 | TiAlN |
| N89962 | CSDB430-0.281-XF2-B.0-Z4 | 9/32 | 5/16 | 1/2 | 2-1/2 | 4 | |
| N89965 | CSDB430-0.281-XF2-B.0-Z4 | 9/32 | 5/16 | 1/2 | 2-1/2 | 4 | TiAlN |
| N89966 | CSDB430-0.313-XD2-B.0-Z4 | 5/16 | 5/16 | 1/2 | 2-1/2 | 4 | |
| N89969 | CSDB430-0.313-XD2-B.0-Z4 | 5/16 | 5/16 | 1/2 | 2-1/2 | 4 | TiAlN |
| N89974 | CSDB430-0.375-XD2-B.0-Z4 | 3/8 | 3/8 | 9/16 | 2-1/2 | 4 | |
| N89977 | CSDB430-0.375-XD2-B.0-Z4 | 3/8 | 3/8 | 9/16 | 2-1/2 | 4 | TiAlN |
| N89982 | CSDB430-0.500-XD1-B.0-Z4 | 1/2 | 1/2 | 5/8 | 3 | 4 | |
| N89985 | CSDB430-0.500-XD1-B.0-Z4 | 1/2 | 1/2 | 5/8 | 3 | 4 | TiAlN |

**DISCOUNT CODE D42**

# METRIC GENERAL PURPOSE- C430M

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

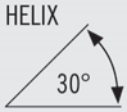
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N46411 | C430M-010-F4-S.0-Z4 | 1mm | 3mm | 4mm | 39mm | 4 | |
| N46412 | C430M-010-F4-S.0-Z4 | 1mm | 3mm | 4mm | 39mm | 4 | AlTiN |
| N46413 | C430M-015-F3-S.0-Z4 | 1.5mm | 3mm | 4.5mm | 39mm | 4 | |
| N46414 | C430M-015-F3-S.0-Z4 | 1.5mm | 3mm | 4.5mm | 39mm | 4 | AlTiN |
| N34455 | C430M-020-F2-S.0-Z4 | 2mm | 3mm | 4mm | 39mm | 4 | |
| N34456 | C430M-020-F2-S.0-Z4 | 2mm | 3mm | 4mm | 39mm | 4 | AlTiN |
| N46415 | C430M-020-F3-S.0-Z4 | 2mm | 3mm | 6.3mm | 39mm | 4 | |
| N46416 | C430M-020-F3-S.0-Z4 | 2mm | 3mm | 6.3mm | 39mm | 4 | AlTiN |
| N46419 | C430M-030-D4-S.0-Z4 | 3mm | 3mm | 12mm | 39mm | 4 | |
| N46420 | C430M-030-D4-S.0-Z4 | 3mm | 3mm | 12mm | 39mm | 4 | AlTiN |
| N46421 | C430M-035-F3-S.0-Z4 | 3.5mm | 4mm | 12mm | 51mm | 4 | |
| N46422 | C430M-035-F3-S.0-Z4 | 3.5mm | 4mm | 12mm | 51mm | 4 | AlTiN |
| N46423 | C430M-040-D4-S.0-Z4 | 4mm | 4mm | 14mm | 51mm | 4 | |
| N46424 | C430M-040-D4-S.0-Z4 | 4mm | 4mm | 14mm | 51mm | 4 | AlTiN |
| N34331 | C430M-050-D5-S.0-Z4 | 5mm | 5mm | 25mm | 75mm | 4 | |
| N34332 | C430M-050-D5-S.0-Z4 | 5mm | 5mm | 25mm | 75mm | 4 | AlTiN |
| N46427 | C430M-050-F3-S.0-Z4 | 5mm | 6mm | 16mm | 51mm | 4 | |
| N46428 | C430M-050-F3-S.0-Z4 | 5mm | 6mm | 16mm | 51mm | 4 | AlTiN |
| N46429 | C430M-060-D3-S.0-Z4 | 6mm | 6mm | 19mm | 51mm | 4 | |
| N46430 | C430M-060-D3-S.0-Z4 | 6mm | 6mm | 19mm | 51mm | 4 | AlTiN |
| N46433 | C430M-080-D2-S.0-Z4 | 8mm | 8mm | 20mm | 64mm | 4 | |
| N46434 | C430M-080-D2-S.0-Z4 | 8mm | 8mm | 20mm | 64mm | 4 | AlTiN |
| N46435 | C430M-090-F2-S.0-Z4 | 9mm | 10mm | 22mm | 73mm | 4 | |
| N46436 | C430M-090-F2-S.0-Z4 | 9mm | 10mm | 22mm | 73mm | 4 | AlTiN |
| N46437 | C430M-100-D2-S.0-Z4 | 10mm | 10mm | 22mm | 73mm | 4 | |
| N46438 | C430M-100-D2-S.0-Z4 | 10mm | 10mm | 22mm | 73mm | 4 | AlTiN |
| N34343 | C430M-100-D5-S.0-Z4 | 10mm | 10mm | 38mm | 150mm | 4 | |
| N34344 | C430M-100-D5-S.0-Z4 | 10mm | 10mm | 38mm | 150mm | 4 | AlTiN |
| N46439 | C430M-110-F2-S.0-Z4 | 11mm | 12mm | 25mm | 74mm | 4 | |
| N46440 | C430M-110-F2-S.0-Z4 | 11mm | 12mm | 25mm | 74mm | 4 | AlTiN |
| N46441 | C430M-120-D2-S.0-Z4 | 12mm | 12mm | 25mm | 74mm | 4 | |
| N46442 | C430M-120-D2-S.0-Z4 | 12mm | 12mm | 25mm | 74mm | 4 | AlTiN |
| N34345 | C430M-120-D4-S.0-Z4 | 12mm | 12mm | 50mm | 100mm | 4 | |
| N34346 | C430M-120-D4-S.0-Z4 | 12mm | 12mm | 50mm | 100mm | 4 | AlTiN |
| N46443 | C430M-140-F2-S.0-Z4 | 14mm | 14mm | 32mm | 84mm | 4 | |

# METRIC GENERAL PURPOSE- C430M

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

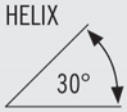
- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N46444 | C430M-140-F2-S.0-Z4 | 14mm | 14mm | 32mm | 84mm | 4 | AlTiN |
| N46445 | C430M-160-D2-S.0-Z4 | 16mm | 16mm | 32mm | 93mm | 4 | |
| N46446 | C430M-160-D2-S.0-Z4 | 16mm | 16mm | 32mm | 93mm | 4 | AlTiN |
| N46447 | C430M-180-D2-S.0-Z4 | 18mm | 18mm | 38mm | 100mm | 4 | |
| N46448 | C430M-180-D2-S.0-Z4 | 18mm | 18mm | 38mm | 100mm | 4 | AlTiN |
| N46449 | C430M-200-D2-S.0-Z4 | 20mm | 20mm | 38mm | 100mm | 4 | |
| N46450 | C430M-200-D2-S.0-Z4 | 20mm | 20mm | 38mm | 100mm | 4 | AlTiN |
| N46451 | C430M-250-D2-S.0-Z4 | 25mm | 25mm | 38mm | 101mm | 4 | |
| N46452 | C430M-250-D2-S.0-Z4 | 25mm | 25mm | 38mm | 101mm | 4 | AlTiN |

# METRIC GENERAL PURPOSE- CB430M

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- General Purpose

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N46453 | CB430M-010-F4-B.0-Z4 | 1mm | 3mm | 4mm | 39mm | 4 | |
| N46454 | CB430M-010-F4-B.0-Z4 | 1mm | 3mm | 4mm | 39mm | 4 | AlTiN |
| N34477 | CB430M-020-F2-B.0-Z4 | 2mm | 3mm | 4mm | 39mm | 4 | |
| N34478 | CB430M-020-F2-B.0-Z4 | 2mm | 3mm | 4mm | 39mm | 4 | AlTiN |
| N47937 | CB430M-030-D2-B.0-Z4 | 3mm | 3mm | 6mm | 39mm | 4 | |
| N47938 | CB430M-030-D2-B.0-Z4 | 3mm | 3mm | 6mm | 39mm | 4 | AlTiN |
| N46461 | CB430M-030-D4-B.0-Z4 | 3mm | 3mm | 12mm | 39mm | 4 | |
| N46462 | CB430M-030-D4-B.0-Z4 | 3mm | 3mm | 12mm | 39mm | 4 | AlTiN |
| N46465 | CB430M-040-D4-B.0-Z4 | 4mm | 4mm | 14mm | 51mm | 4 | |
| N46466 | CB430M-040-D4-B.0-Z4 | 4mm | 4mm | 14mm | 51mm | 4 | AlTiN |
| N34361 | CB430M-040-D6-B.0-Z4 | 4mm | 4mm | 25mm | 75mm | 4 | |
| N34362 | CB430M-040-D6-B.0-Z4 | 4mm | 4mm | 25mm | 75mm | 4 | AlTiN |
| N46469 | CB430M-050-F3-B.0-Z4 | 5mm | 6mm | 16mm | 51mm | 4 | |
| N46470 | CB430M-050-F3-B.0-Z4 | 5mm | 6mm | 16mm | 51mm | 4 | AlTiN |
| N47941 | CB430M-060-D2-B.0-Z4 | 6mm | 6mm | 9mm | 51mm | 4 | |
| N47942 | CB430M-060-D2-B.0-Z4 | 6mm | 6mm | 9mm | 51mm | 4 | AlTiN |
| N46471 | CB430M-060-D3-B.0-Z4 | 6mm | 6mm | 19mm | 51mm | 4 | |
| N46472 | CB430M-060-D3-B.0-Z4 | 6mm | 6mm | 19mm | 51mm | 4 | AlTiN |
| N34369 | CB430M-080-D3-B.0-Z4 | 8mm | 8mm | 25mm | 75mm | 4 | |
| N34370 | CB430M-080-D3-B.0-Z4 | 8mm | 8mm | 25mm | 75mm | 4 | AlTiN |
| N34371 | CB430M-080-D4-B.0-Z4 | 8mm | 8mm | 25mm | 150mm | 4 | |
| N34372 | CB430M-080-D4-B.0-Z4 | 8mm | 8mm | 25mm | 150mm | 4 | AlTiN |
| N46479 | CB430M-100-D2-B.0-Z4 | 10mm | 10mm | 22mm | 73mm | 4 | |
| N46480 | CB430M-100-D2-B.0-Z4 | 10mm | 10mm | 22mm | 73mm | 4 | AlTiN |
| N46483 | CB430M-120-D2-B.0-Z4 | 12mm | 12mm | 25mm | 74mm | 4 | |
| N46484 | CB430M-120-D2-B.0-Z4 | 12mm | 12mm | 25mm | 74mm | 4 | AlTiN |

Niagara Cutter

**C230 / C230R / CNC230 / CD230 / CSD230**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SLOTTING** | | | | | | | | | | | | | | | | |
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (sf / min) | | | $Z_n = 2$ | | | | | | | |
| | | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 0.30 | 1.00 | | 400 | | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0005 | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | | | 340 | - | 460 | $v_f$ (in/min) | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| | E 3 - 4 | 0.20 | 1.00 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| | E 5 - 6 | 0.20 | 1.00 | | 100 | | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0019 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| M | E 8 - 9 | 0.50 | 1.00 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0018 |
| | | | | 290 | - | 350 | $v_f$ (in/min) | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 |
| | E 10 - 11 | 0.30 | 1.00 | | 250 | | n (rev/min) | 15280 | 7640 | 3820 | 2547 | 1910 | 1528 | 1273 | 955 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| | | | | 220 | - | 280 | $v_f$ (in/min) | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
| K | E 12 - 13 | 0.30 | 1.00 | | 270 | | n (rev/min) | 16502 | 8251 | 4126 | 2750 | 2063 | 1650 | 1375 | 1031 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0012 | 0.0017 | 0.0023 | 0.0029 | 0.0035 | 0.0046 |
| | | | | 210 | - | 330 | $v_f$ (in/min) | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 |
| | E 14 - 15 | 0.20 | 1.00 | | 145 | | n (rev/min) | 8862 | 4431 | 2216 | 1477 | 1108 | 886 | 739 | 554 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0020 | 0.0027 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| N | E / M / A 16 | 1.00 | 1.00 | | 700 | | n (rev/min) | 42784 | 21392 | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0009 | 0.0018 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |
| | | | | 400 | - | 1000 | $v_f$ (in/min) | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 |
| | E / M / A 17 | 1.00 | 1.00 | | 700 | | n (rev/min) | 42784 | 21392 | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0009 | 0.0018 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |
| | | | | 400 | - | 1000 | $v_f$ (in/min) | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 |
| S | E 19 | 0.30 | 1.00 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| | E 20 | 0.30 | 1.00 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| | E 21 | 0.30 | 1.00 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| | E 22 | 0.30 | 1.00 | | 140 | | n (rev/min) | 8557 | 4278 | 2139 | 1426 | 1070 | 856 | 713 | 535 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 80 | - | 200 | $v_f$ (in/min) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**C230 / C230R / CNC230 / CD230 / CSD230**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (sf / min) | | | $Z_n = 2$ | | | | | | | |
| | | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.00 | 0.25 | | 400 | | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 340 | - | 460 | $v_f$ (in/min) | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 |
| | E 3 - 4 | 1.00 | 0.25 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 |
| | E 5 - 6 | 1.00 | 0.20 | | 100 | | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| M | E 8 - 9 | 0.50 | 0.20 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 290 | - | 350 | $v_f$ (in/min) | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 |
| | E 10 - 11 | 0.30 | 0.20 | | 250 | | n (rev/min) | 15280 | 7640 | 3820 | 2547 | 1910 | 1528 | 1273 | 955 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 |
| | | | | 220 | - | 280 | $v_f$ (in/min) | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| K | E 12 - 13 | 1.00 | 0.25 | | 270 | | n (rev/min) | 16502 | 8251 | 4126 | 2750 | 2063 | 1650 | 1375 | 1031 |
| | | | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0015 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |
| | | | | 210 | - | 330 | $v_f$ (in/min) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| | E 14 - 15 | 0.50 | 0.25 | | 145 | | n (rev/min) | 8862 | 4431 | 2216 | 1477 | 1108 | 886 | 739 | 554 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| N | E / M / A 16 | 2.00 | 0.05 | | 700 | | n (rev/min) | 42784 | 21392 | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0011 | 0.0023 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0090 |
| | | | | 400 | - | 1000 | $v_f$ (in/min) | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 |
| | E / M / A 17 | 2.00 | 0.05 | | 700 | | n (rev/min) | 42784 | 21392 | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0011 | 0.0023 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0090 |
| | | | | 400 | - | 1000 | $v_f$ (in/min) | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 |
| S | E 19 | 0.20 | 0.05 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| | E 20 | 0.20 | 0.05 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| | E 21 | 0.20 | 0.05 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| | E 22 | 0.30 | 0.15 | | 140 | | n (rev/min) | 8557 | 4278 | 2139 | 1426 | 1070 | 856 | 713 | 535 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 80 | - | 200 | $v_f$ (in/min) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

**CB230 / CNCB230 / CSDB230**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | SLOTTING | | | | | | | | | |
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (sf / min) | | | $Z_n = 2$ | | | | | | | | |
| | | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 0.50 | 1.00 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0005 | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | | | 260 | - | 380 | $v_f$ (in/min) | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 |
| | E 3 - 4 | 0.40 | 1.00 | | 160 | | n (rev/min) | 9779 | 4890 | 2445 | 1630 | 1222 | 978 | 815 | 611 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 100 | - | 220 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| | E 5 - 6 | 0.30 | 1.00 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0019 |
| | | | | 20 | - | 140 | $v_f$ (in/min) | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| M | E 8 - 9 | 0.50 | 1.00 | | 256 | | n (rev/min) | 15647 | 7823 | 3912 | 2608 | 1956 | 1565 | 1304 | 978 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0018 |
| | | | | 226 | - | 286 | $v_f$ (in/min) | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| | E 10 - 11 | 0.40 | 1.00 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| | | | | 170 | - | 230 | $v_f$ (in/min) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| K | E 12 - 13 | 0.50 | 1.00 | | 216 | | n (rev/min) | 13202 | 6601 | 3300 | 2200 | 1650 | 1320 | 1100 | 825 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0012 | 0.0017 | 0.0023 | 0.0029 | 0.0035 | 0.0046 |
| | | | | 156 | - | 276 | $v_f$ (in/min) | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 |
| | E 14 - 15 | 0.30 | 1.00 | | 116 | | n (rev/min) | 7090 | 3545 | 1772 | 1182 | 886 | 709 | 591 | 443 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0020 | 0.0027 |
| | | | | 56 | - | 176 | $v_f$ (in/min) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| N | E / M / A 16 | 1.00 | 1.00 | | 560 | | n (rev/min) | 34227 | 17114 | 8557 | 5705 | 4278 | 3423 | 2852 | 2139 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0009 | 0.0018 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |
| | | | | 260 | - | 860 | $v_f$ (in/min) | 30.8 | 30.8 | 30.8 | 30.8 | 30.8 | 30.8 | 30.8 | 30.8 |
| | E / M / A 17 | 1.00 | 1.00 | | 560 | | n (rev/min) | 34227 | 17114 | 8557 | 5705 | 4278 | 3423 | 2852 | 2139 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0009 | 0.0018 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |
| | | | | 260 | - | 860 | $v_f$ (in/min) | 30.8 | 30.8 | 30.8 | 30.8 | 30.8 | 30.8 | 30.8 | 30.8 |
| S | E 19 | 0.20 | 1.00 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| | E 20 | 0.20 | 1.00 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| | E 21 | 0.20 | 1.00 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| | E 22 | 0.30 | 1.00 | | 112 | | n (rev/min) | 6845 | 3423 | 1711 | 1141 | 856 | 685 | 570 | 428 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 52 | - | 172 | $v_f$ (in/min) | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**CB230 / CNCB230 / CSDB230**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 2$ | | | | | | | |
| | | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.00 | 0.30 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 260 | - | 380 | $v_f$ (in/min) | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| | E 3 - 4 | 1.00 | 0.30 | | 160 | | n (rev/min) | 9779 | 4890 | 2445 | 1630 | 1222 | 978 | 815 | 611 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 100 | - | 220 | $v_f$ (in/min) | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| | E 5 - 6 | 1.00 | 0.20 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 20 | - | 140 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| M | E 8 - 9 | 0.50 | 0.30 | | 256 | | n (rev/min) | 15647 | 7823 | 3912 | 2608 | 1956 | 1565 | 1304 | 978 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 226 | - | 286 | $v_f$ (in/min) | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 |
| | E 10 - 11 | 0.30 | 0.20 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 |
| | | | | 170 | - | 230 | $v_f$ (in/min) | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
| K | E 12 - 13 | 1.00 | 0.50 | | 216 | | n (rev/min) | 13202 | 6601 | 3300 | 2200 | 1650 | 1320 | 1100 | 825 |
| | | | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0015 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |
| | | | | 156 | - | 276 | $v_f$ (in/min) | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 |
| | E 14 - 15 | 0.50 | 0.30 | | 116 | | n (rev/min) | 7090 | 3545 | 1772 | 1182 | 886 | 709 | 591 | 443 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 56 | - | 176 | $v_f$ (in/min) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| N | E / M / A 16 | 2.00 | 0.50 | | 560 | | n (rev/min) | 34227 | 17114 | 8557 | 5705 | 4278 | 3423 | 2852 | 2139 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0011 | 0.0023 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0090 |
| | | | | 260 | - | 860 | $v_f$ (in/min) | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 |
| | E / M / A 17 | 2.00 | 0.50 | | 560 | | n (rev/min) | 34227 | 17114 | 8557 | 5705 | 4278 | 3423 | 2852 | 2139 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0011 | 0.0023 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0090 |
| | | | | 260 | - | 860 | $v_f$ (in/min) | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 |
| S | E 19 | 0.20 | 0.10 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| | E 20 | 0.20 | 0.10 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| | E 21 | 0.20 | 0.10 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| | E 22 | 0.30 | 0.20 | | 112 | | n (rev/min) | 6845 | 3423 | 1711 | 1141 | 856 | 685 | 570 | 428 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 52 | - | 172 | $v_f$ (in/min) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**C230M**

| | | | | | | | | SLOTTING | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (m / min) | | | $Z_n = 2$ | | | | | | | |
| | | | | | | | | 1.5 | 3 | 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 0.30 | 1.00 | | 122 | | n (min-0) | 25890 | 12940 | 6470 | 3880 | 3240 | 2430 | 1940 | 1550 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 104 | - | 140 | $v_f$ (mm/min) | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 280 |
| | E 3 - 4 | 0.20 | 1.00 | | 61 | | n (min-0) | 12940 | 6470 | 3240 | 1940 | 1620 | 1210 | 970 | 780 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 43 | - | 79 | $v_f$ (mm/min) | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |
| | E 5 - 6 | 0.20 | 1.00 | | 30 | | n (min-0) | 6370 | 3180 | 1590 | 950 | 800 | 600 | 480 | 380 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 12 | - | 49 | $v_f$ (mm/min) | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| M | E 8 - 9 | 0.50 | 1.00 | | 98 | | n (min-0) | 20800 | 10400 | 5200 | 3120 | 2600 | 1950 | 1560 | 1250 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 88 | - | 107 | $v_f$ (mm/min) | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 |
| | E 10 - 11 | 0.30 | 1.00 | | 76 | | n (min-0) | 16130 | 8060 | 4030 | 2420 | 2020 | 1510 | 1210 | 970 |
| | | | | | | | $f_z$ (mm) | 0.504 | 0.504 | 0.504 | 0.504 | 0.504 | 0.504 | 0.504 | 0.504 |
| | | | | 67 | - | 85 | $v_f$ (mm/min) | 16260 | 8125 | 4060 | 2440 | 2035 | 1520 | 1220 | 980 |
| K | E 12 - 13 | 0.30 | 1.00 | | 82 | | n (min-0) | 17400 | 8700 | 4350 | 2610 | 2180 | 1630 | 1310 | 1040 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 64 | - | 101 | $v_f$ (mm/min) | 190 | 190 | 190 | 190 | 190 | 190 | 190 | 185 |
| | E 14 - 15 | 0.20 | 1.00 | | 44 | | n (min-0) | 9340 | 4670 | 2330 | 1400 | 1170 | 880 | 700 | 560 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 26 | - | 62 | $v_f$ (mm/min) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| N | E / M / A 16 | 1.00 | 1.00 | | 213 | | n (min-0) | 45200 | 22600 | 11300 | 6780 | 5650 | 4240 | 3390 | 2710 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 122 | - | 305 | $v_f$ (mm/min) | 490 | 490 | 490 | 490 | 490 | 490 | 490 | 490 |
| | E / M / A 17 | 1.00 | 1.00 | | 213 | | n (min-0) | 45200 | 22600 | 11300 | 6780 | 5650 | 4240 | 3390 | 2710 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 122 | - | 305 | $v_f$ (mm/min) | 490 | 490 | 490 | 490 | 490 | 490 | 490 | 490 |
| S | E 19 | 0.30 | 1.00 | | 24 | | n (min-0) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | E 20 | 0.30 | 1.00 | | 24 | | n (min-0) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | E 21 | 0.30 | 1.00 | | 24 | | n (min-0) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | E 22 | 0.30 | 1.00 | | 43 | | n (min-0) | 9120 | 4560 | 2280 | 1370 | 1140 | 860 | 680 | 550 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 24 | - | 61 | $v_f$ (mm/min) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

C230M

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (m / min) | | | $Z_n = 2$ | | | | | | | |
| | | | | | | | | 1.5 | 3 | 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 1.00 | 0.25 | | 122 | | n (min-0) | 25890 | 12940 | 6470 | 3880 | 3240 | 2430 | 1940 | 1550 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 104 | - | 140 | $v_f$ (mm/min) | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 280 |
| | E 3 - 4 | 1.00 | 0.25 | | 61 | | n (min-0) | 12940 | 6470 | 3240 | 1940 | 1620 | 1210 | 970 | 780 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 43 | - | 79 | $v_f$ (mm/min) | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |
| | E 5 - 6 | 1.00 | 0.20 | | 30 | | n (min-0) | 6370 | 3180 | 1590 | 950 | 800 | 600 | 480 | 380 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 12 | - | 49 | $v_f$ (mm/min) | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| M | E 8 - 9 | 0.50 | 0.20 | | 98 | | n (min-0) | 20800 | 10400 | 5200 | 3120 | 2600 | 1950 | 1560 | 1250 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 88 | - | 107 | $v_f$ (mm/min) | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 |
| | E 10 - 11 | 0.30 | 0.20 | | 76 | | n (min-0) | 16130 | 8060 | 4030 | 2420 | 2020 | 1510 | 1210 | 970 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 67 | - | 85 | $v_f$ (mm/min) | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 175 |
| K | E 12 - 13 | 1.00 | 0.25 | | 82 | | n (min-0) | 17400 | 8700 | 4350 | 2610 | 2180 | 1630 | 1310 | 1040 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 64 | - | 101 | $v_f$ (mm/min) | 190 | 190 | 190 | 190 | 190 | 190 | 190 | 185 |
| | E 14 - 15 | 0.50 | 0.25 | | 44 | | n (min-0) | 9340 | 4670 | 2330 | 1400 | 1170 | 880 | 700 | 560 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 26 | - | 62 | $v_f$ (mm/min) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| N | E / M / A 16 | 2.00 | 0.05 | | 213 | | n (min-0) | 45200 | 22600 | 11300 | 6780 | 5650 | 4240 | 3390 | 2710 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 122 | - | 305 | $v_f$ (mm/min) | 490 | 490 | 490 | 490 | 490 | 490 | 490 | 490 |
| | E / M / A 17 | 2.00 | 0.05 | | 213 | | n (min-0) | 45200 | 22600 | 11300 | 6780 | 5650 | 4240 | 3390 | 2710 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 122 | - | 305 | $v_f$ (mm/min) | 490 | 490 | 490 | 490 | 490 | 490 | 490 | 490 |
| S | E 19 | 0.20 | 0.05 | | 24 | | n (min-0) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | E 20 | 0.20 | 0.05 | | 24 | | n (min-0) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | E 21 | 0.20 | 0.05 | | 24 | | n (min-0) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | E 22 | 0.30 | 0.15 | | 43 | | n (min-0) | 9120 | 4560 | 2280 | 1370 | 1140 | 860 | 680 | 550 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 24 | - | 61 | $v_f$ (mm/min) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**CB230M**

| | | | | | | | | SLOTTING | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (m / min) | | | $Z_n = 2$ | | | | | | | |
| | | | | | | | | 1.5 | 3 | 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 0.50 | 1.00 | | 98 | | n (rev/min) | 20800 | 10400 | 5200 | 3120 | 2600 | 2230 | 1560 | 1250 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.050 | 0.072 | 0.090 |
| | | | | 79 | - | 116 | $v_f$ (mm/min) | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 |
| | E 3 - 4 | 0.40 | 1.00 | | 49 | | n (rev/min) | 10400 | 5200 | 2600 | 1560 | 1300 | 1110 | 780 | 620 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.007 | 0.013 | 0.022 | 0.027 | 0.031 | 0.045 | 0.056 |
| | | | | 30 | - | 67 | $v_f$ (mm/min) | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 69 |
| | E 5 - 6 | 0.30 | 1.00 | | 24 | | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 550 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.006 | 0.012 | 0.019 | 0.023 | 0.027 | 0.038 | 0.048 |
| | | | | 6 | - | 43 | $v_f$ (mm/min) | 29 | 29 | 29 | 29 | 29 | 30 | 29 | 30 |
| M | E 8 - 9 | 0.50 | 1.00 | | 78 | | n (rev/min) | 16550 | 8280 | 4140 | 2480 | 2070 | 1770 | 1240 | 990 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.011 | 0.018 | 0.021 | 0.025 | 0.035 | 0.044 |
| | | | | 69 | - | 87 | $v_f$ (mm/min) | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 87 |
| | E 10 - 11 | 0.40 | 1.00 | | 61 | | n (rev/min) | 12940 | 6470 | 3240 | 1940 | 1620 | 1390 | 970 | 780 |
| | | | | | | | $f_z$ (mm) | 0.002 | 0.005 | 0.010 | 0.016 | 0.019 | 0.022 | 0.032 | 0.040 |
| | | | | 52 | - | 70 | $v_f$ (mm/min) | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 |
| K | E 12 - 13 | 0.50 | 1.00 | | 66 | | n (rev/min) | 14010 | 7000 | 3500 | 2100 | 1750 | 1500 | 1050 | 840 |
| | | | | | | | $f_z$ (mm) | 0.007 | 0.014 | 0.028 | 0.046 | 0.056 | 0.065 | 0.093 | 0.116 |
| | | | | 48 | - | 84 | $v_f$ (mm/min) | 195 | 195 | 195 | 195 | 195 | 195 | 195 | 195 |
| | E 14 - 15 | 0.30 | 1.00 | | 35 | | n (rev/min) | 7430 | 3710 | 1860 | 1110 | 930 | 800 | 560 | 450 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.008 | 0.016 | 0.027 | 0.033 | 0.038 | 0.054 | 0.068 |
| | | | | 17 | - | 54 | $v_f$ (mm/min) | 61 | 61 | 61 | 60 | 61 | 61 | 61 | 61 |
| N | E / M / A 16 | 1.00 | 1.00 | | 171 | | n (rev/min) | 36290 | 18140 | 9070 | 5440 | 4540 | 3890 | 2720 | 2180 |
| | | | | | | | $f_z$ (mm) | 0.011 | 0.022 | 0.043 | 0.072 | 0.086 | 0.101 | 0.144 | 0.180 |
| | | | | 79 | - | 262 | $v_f$ (mm/min) | 784 | 784 | 784 | 783 | 785 | 784 | 783 | 785 |
| | E / M / A 17 | 1.00 | 1.00 | | 171 | | n (rev/min) | 36290 | 18140 | 9070 | 5440 | 4540 | 3890 | 2720 | 2180 |
| | | | | | | | $f_z$ (mm) | 0.011 | 0.022 | 0.043 | 0.072 | 0.086 | 0.101 | 0.144 | 0.180 |
| | | | | 79 | - | 262 | $v_f$ (mm/min) | 784 | 784 | 784 | 783 | 785 | 784 | 783 | 785 |
| S | E 19 | 0.20 | 1.00 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 480 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.034 | 0.048 | 0.060 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| | E 20 | 0.20 | 1.00 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 480 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.034 | 0.048 | 0.060 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| | E 21 | 0.20 | 1.00 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 480 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.034 | 0.048 | 0.060 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| | E 22 | 0.30 | 1.00 | | 34 | | n (rev/min) | 7220 | 3610 | 1800 | 1080 | 900 | 770 | 540 | 430 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.007 | 0.013 | 0.022 | 0.027 | 0.031 | 0.045 | 0.056 |
| | | | | 16 | - | 52 | $v_f$ (mm/min) | 49 | 49 | 48 | 48 | 48 | 48 | 48 | 48 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**CB230M**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (m / min) | | | $Z_n = 2$ | | | | | | | |
| | | | | | | | | 1.5 | 3 | 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 1.00 | 0.30 | | 98 | | n (rev/min) | 20800 | 10400 | 5200 | 3120 | 2600 | 2230 | 1560 | 1250 |
| | | | | | | | $f_z$ (mm) | 0.007 | 0.014 | 0.027 | 0.045 | 0.054 | 0.063 | 0.090 | 0.113 |
| | | | | 79 | - | 116 | $v_f$ (mm/min) | 281 | 281 | 281 | 281 | 281 | 281 | 281 | 281 |
| | E 3 - 4 | 1.00 | 0.30 | | 49 | | n (rev/min) | 10400 | 5200 | 2600 | 1560 | 1300 | 1110 | 780 | 620 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.008 | 0.017 | 0.028 | 0.034 | 0.039 | 0.056 | 0.070 |
| | | | | 30 | - | 67 | $v_f$ (mm/min) | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 87 |
| | E 5 - 6 | 1.00 | 0.20 | | 24 | | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 550 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.034 | 0.048 | 0.060 |
| | | | | 6 | - | 43 | $v_f$ (mm/min) | 37 | 37 | 37 | 36 | 37 | 37 | 36 | 37 |
| M | E 8 - 9 | 0.50 | 0.30 | | 78 | | n (rev/min) | 16550 | 8280 | 4140 | 2480 | 2070 | 1770 | 1240 | 990 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.007 | 0.013 | 0.022 | 0.026 | 0.031 | 0.044 | 0.055 |
| | | | | 69 | - | 87 | $v_f$ (mm/min) | 109 | 109 | 109 | 109 | 109 | 109 | 109 | 109 |
| | E 10 - 11 | 0.30 | 0.20 | | 61 | | n (rev/min) | 12940 | 6470 | 3240 | 1940 | 1620 | 1390 | 970 | 780 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.006 | 0.012 | 0.020 | 0.024 | 0.028 | 0.040 | 0.050 |
| | | | | 52 | - | 70 | $v_f$ (mm/min) | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| K | E 12 - 13 | 1.00 | 0.50 | | 66 | | n (rev/min) | 14010 | 7000 | 3500 | 2100 | 1750 | 1500 | 1050 | 840 |
| | | | | | | | $f_z$ (mm) | 0.009 | 0.017 | 0.035 | 0.058 | 0.070 | 0.081 | 0.116 | 0.145 |
| | | | | 48 | - | 84 | $v_f$ (mm/min) | 244 | 244 | 244 | 244 | 244 | 244 | 244 | 244 |
| | E 14 - 15 | 0.50 | 0.30 | | 35 | | n (rev/min) | 7430 | 3710 | 1860 | 1110 | 930 | 800 | 560 | 450 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.010 | 0.020 | 0.034 | 0.041 | 0.048 | 0.068 | 0.085 |
| | | | | 17 | - | 54 | $v_f$ (mm/min) | 76 | 76 | 76 | 75 | 76 | 76 | 76 | 77 |
| N | E / M / A 16 | 2.00 | 0.50 | | 171 | | n (rev/min) | 36290 | 18140 | 9070 | 5440 | 4540 | 3890 | 2720 | 2180 |
| | | | | | | | $f_z$ (mm) | 0.014 | 0.027 | 0.054 | 0.090 | 0.108 | 0.126 | 0.180 | 0.225 |
| | | | | 79 | - | 262 | $v_f$ (mm/min) | 980 | 980 | 980 | 979 | 981 | 980 | 979 | 981 |
| | E / M / A 17 | 2.00 | 0.50 | | 171 | | n (rev/min) | 36290 | 18140 | 9070 | 5440 | 4540 | 3890 | 2720 | 2180 |
| | | | | | | | $f_z$ (mm) | 0.014 | 0.027 | 0.054 | 0.090 | 0.108 | 0.126 | 0.180 | 0.225 |
| | | | | 79 | - | 262 | $v_f$ (mm/min) | 980 | 980 | 980 | 979 | 981 | 980 | 979 | 981 |
| S | E 19 | 0.20 | 0.10 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 480 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.009 | 0.018 | 0.030 | 0.036 | 0.042 | 0.060 | 0.075 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 41 |
| | E 20 | 0.20 | 0.10 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 480 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.009 | 0.018 | 0.030 | 0.036 | 0.042 | 0.060 | 0.075 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 41 |
| | E 21 | 0.20 | 0.10 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 480 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.009 | 0.018 | 0.030 | 0.036 | 0.042 | 0.060 | 0.075 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 41 |
| | E 22 | 0.30 | 0.20 | | 34 | | n (rev/min) | 7220 | 3610 | 1800 | 1080 | 900 | 770 | 540 | 430 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.008 | 0.017 | 0.028 | 0.034 | 0.039 | 0.056 | 0.070 |
| | | | | 16 | - | 52 | $v_f$ (mm/min) | 61 | 61 | 60 | 60 | 60 | 60 | 60 | 60 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

C330

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | SLOTTING | | | | | | | | | |
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (sf / min) | | | $Z_n = 3$ | | | | | | | | |
| | | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 0.50 | 1.00 | | 400 | | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0005 | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | | | 340 | - | 460 | $v_f$ (in/min) | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 |
| | E 3 - 4 | 0.40 | 1.00 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 |
| | E 5 - 6 | 0.30 | 1.00 | | 100 | | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0019 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| M | E 8 - 9 | 0.50 | 1.00 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0018 |
| | | | | 290 | - | 350 | $v_f$ (in/min) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| | E 10 - 11 | 0.40 | 1.00 | | 290 | | n (rev/min) | 17725 | 8862 | 4431 | 2954 | 2216 | 1772 | 1477 | 1108 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| | | | | 260 | - | 320 | $v_f$ (in/min) | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 |
| K | E 12 - 13 | 0.50 | 1.00 | | 270 | | n (rev/min) | 16502 | 8251 | 4126 | 2750 | 2063 | 1650 | 1375 | 1031 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0012 | 0.0017 | 0.0023 | 0.0029 | 0.0035 | 0.0046 |
| | | | | 210 | - | 330 | $v_f$ (in/min) | 14.4 | 14.4 | 14.4 | 14.4 | 14.4 | 14.4 | 14.4 | 14.4 |
| | E 14 - 15 | 0.30 | 1.00 | | 145 | | n (rev/min) | 8862 | 4431 | 2216 | 1477 | 1108 | 886 | 739 | 554 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0020 | 0.0027 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| N | E / M / A 16 | 1.00 | 1.00 | | 700 | | n (rev/min) | 42784 | 21392 | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0009 | 0.0018 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |
| | | | | 400 | - | 1000 | $v_f$ (in/min) | 57.8 | 57.8 | 57.8 | 57.8 | 57.8 | 57.8 | 57.8 | 57.8 |
| | E / M / A 17 | 1.00 | 1.00 | | 700 | | n (rev/min) | 42784 | 21392 | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0009 | 0.0018 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |
| | | | | 400 | - | 1000 | $v_f$ (in/min) | 57.8 | 57.8 | 57.8 | 57.8 | 57.8 | 57.8 | 57.8 | 57.8 |
| S | E 19 | 0.20 | 1.00 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| | E 20 | 0.20 | 1.00 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| | E 21 | 0.20 | 1.00 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| | E 22 | 0.30 | 1.00 | | 130 | | n (rev/min) | 7946 | 3973 | 1986 | 1324 | 993 | 795 | 662 | 497 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 70 | - | 190 | $v_f$ (in/min) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

C330

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (sf / min) | | | $Z_n = 3$ | | | | | | | |
| | | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.00 | 0.30 | | 400 | | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 340 | - | 460 | $v_f$ (in/min) | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 |
| | E 3 - 4 | 1.00 | 0.30 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 |
| | E 5 - 6 | 1.00 | 0.20 | | 100 | | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| M | E 8 - 9 | 0.50 | 0.30 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 290 | - | 350 | $v_f$ (in/min) | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 |
| | E 10 - 11 | 0.30 | 0.20 | | 290 | | n (rev/min) | 17725 | 8862 | 4431 | 2954 | 2216 | 1772 | 1477 | 1108 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 |
| | | | | 260 | - | 320 | $v_f$ (in/min) | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| K | E 12 - 13 | 1.00 | 0.50 | | 270 | | n (rev/min) | 16502 | 8251 | 4126 | 2750 | 2063 | 1650 | 1375 | 1031 |
| | | | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0015 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |
| | | | | 210 | - | 330 | $v_f$ (in/min) | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 |
| | E 14 - 15 | 0.50 | 0.30 | | 145 | | n (rev/min) | 8862 | 4431 | 2216 | 1477 | 1108 | 886 | 739 | 554 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 |
| N | E / M / A 16 | 2.00 | 0.50 | | 700 | | n (rev/min) | 42784 | 21392 | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0011 | 0.0023 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0090 |
| | | | | 400 | - | 1000 | $v_f$ (in/min) | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 |
| | E / M / A 17 | 2.00 | 0.50 | | 700 | | n (rev/min) | 42784 | 21392 | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0011 | 0.0023 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0090 |
| | | | | 400 | - | 1000 | $v_f$ (in/min) | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 |
| S | E 19 | 0.20 | 0.10 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| | E 20 | 0.20 | 0.10 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| | E 21 | 0.20 | 0.10 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| | E 22 | 0.30 | 0.20 | | 130 | | n (rev/min) | 7946 | 3973 | 1986 | 1324 | 993 | 795 | 662 | 497 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 70 | - | 190 | $v_f$ (in/min) | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**CB330**

| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | SLOTTING $Z_n = 3$ | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 0.30 | 1.00 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0005 | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | | | 260 | - | 380 | $v_f$ (in/min) | 13.2 | 13.2 | 13.2 | 13.2 | 13.2 | 13.2 | 13.2 | 13.2 |
| | E 3 - 4 | 0.20 | 1.00 | | 150 | | n (rev/min) | 9168 | 4584 | 2292 | 1528 | 1146 | 917 | 764 | 573 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 90 | - | 210 | $v_f$ (in/min) | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| | E 5 - 6 | 0.20 | 1.00 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0019 |
| | | | | 20 | - | 140 | $v_f$ (in/min) | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| M | E 8 - 9 | 0.60 | 1.00 | | 240 | | n (rev/min) | 14669 | 7334 | 3667 | 2445 | 1834 | 1467 | 1222 | 917 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0018 |
| | | | | 210 | - | 270 | $v_f$ (in/min) | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |
| | E 10 - 11 | 0.30 | 1.00 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| | | | | 170 | - | 230 | $v_f$ (in/min) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| K | E 12 - 13 | 0.40 | 1.00 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0012 | 0.0017 | 0.0023 | 0.0029 | 0.0035 | 0.0046 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 |
| | E 14 - 15 | 0.20 | 1.00 | | 120 | | n (rev/min) | 7334 | 3667 | 1834 | 1222 | 917 | 733 | 611 | 458 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0020 | 0.0027 |
| | | | | 60 | - | 180 | $v_f$ (in/min) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| N | E / M / A 16 | 0.20 | 1.00 | | 400 | | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0009 | 0.0018 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |
| | | | | 100 | - | 700 | $v_f$ (in/min) | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 |
| | E / M / A 17 | 0.20 | 1.00 | | 400 | | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0009 | 0.0018 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |
| | | | | 100 | - | 700 | $v_f$ (in/min) | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 |
| S | E 19 | 0.10 | 1.00 | | 60 | | n (rev/min) | 3667 | 1834 | 917 | 611 | 458 | 367 | 306 | 229 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 30 | - | 90 | $v_f$ (in/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| | E 20 | 0.10 | 1.00 | | 60 | | n (rev/min) | 3667 | 1834 | 917 | 611 | 458 | 367 | 306 | 229 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 30 | - | 90 | $v_f$ (in/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| | E 21 | 0.10 | 1.00 | | 60 | | n (rev/min) | 3667 | 1834 | 917 | 611 | 458 | 367 | 306 | 229 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 30 | - | 90 | $v_f$ (in/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| | E 22 | 0.10 | 1.00 | | 100 | | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

CB330

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | $Z_n = 3$ | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.00 | 0.30 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 260 | - | 380 | $v_f$ (in/min) | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 |
| | E 3 - 4 | 1.00 | 0.30 | | 150 | | n (rev/min) | 9168 | 4584 | 2292 | 1528 | 1146 | 917 | 764 | 573 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 90 | - | 210 | $v_f$ (in/min) | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |
| | E 5 - 6 | 1.00 | 0.20 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 20 | - | 140 | $v_f$ (in/min) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| M | E 8 - 9 | 1.00 | 0.30 | | 240 | | n (rev/min) | 14669 | 7334 | 3667 | 2445 | 1834 | 1467 | 1222 | 917 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 210 | - | 270 | $v_f$ (in/min) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
| | E 10 - 11 | 1.00 | 0.20 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 |
| | | | | 170 | - | 230 | $v_f$ (in/min) | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| K | E 12 - 13 | 1.00 | 0.40 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0015 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 |
| | E 14 - 15 | 1.00 | 0.20 | | 120 | | n (rev/min) | 7334 | 3667 | 1834 | 1222 | 917 | 733 | 611 | 458 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 60 | - | 180 | $v_f$ (in/min) | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 |
| N | E / M / A 16 | 2.00 | 0.70 | | 400 | | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0011 | 0.0023 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0090 |
| | | | | 100 | - | 700 | $v_f$ (in/min) | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 |
| | E / M / A 17 | 2.00 | 0.70 | | 400 | | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0011 | 0.0023 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0090 |
| | | | | 100 | - | 700 | $v_f$ (in/min) | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 | 41.3 |
| S | E 19 | 0.50 | 0.30 | | 60 | | n (rev/min) | 3667 | 1834 | 917 | 611 | 458 | 367 | 306 | 229 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 30 | - | 90 | $v_f$ (in/min) | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| | E 20 | 0.50 | 0.30 | | 60 | | n (rev/min) | 3667 | 1834 | 917 | 611 | 458 | 367 | 306 | 229 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 30 | - | 90 | $v_f$ (in/min) | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| | E 21 | 0.50 | 0.30 | | 60 | | n (rev/min) | 3667 | 1834 | 917 | 611 | 458 | 367 | 306 | 229 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 30 | - | 90 | $v_f$ (in/min) | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| | E 22 | 0.50 | 0.20 | | 100 | | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

C360

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (sf / min) | | | $Z_n = 3$ | | | | | | | |
| | | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.00 | 0.15 | | 400 | | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 340 | - | 460 | $v_f$ (in/min) | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 |
| | E 3 - 4 | 1.00 | 0.15 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 |
| | E 5 - 6 | 1.00 | 0.15 | | 100 | | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| M | E 8 - 9 | 0.50 | 0.15 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 290 | - | 350 | $v_f$ (in/min) | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 |
| | E 10 - 11 | 0.30 | 0.15 | | 290 | | n (rev/min) | 17725 | 8862 | 4431 | 2954 | 2216 | 1772 | 1477 | 1108 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 |
| | | | | 260 | - | 320 | $v_f$ (in/min) | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| K | E 12 - 13 | 1.00 | 0.15 | | 270 | | n (rev/min) | 16502 | 8251 | 4126 | 2750 | 2063 | 1650 | 1375 | 1031 |
| | | | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0015 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |
| | | | | 210 | - | 330 | $v_f$ (in/min) | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 |
| | E 14 - 15 | 0.50 | 0.15 | | 145 | | n (rev/min) | 8862 | 4431 | 2216 | 1477 | 1108 | 886 | 739 | 554 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 |
| N | E / M / A 16 | 2.00 | 0.15 | | 700 | | n (rev/min) | 42784 | 21392 | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0011 | 0.0023 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0090 |
| | | | | 400 | - | 1000 | $v_f$ (in/min) | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 |
| | E / M / A 17 | 2.00 | 0.15 | | 700 | | n (rev/min) | 42784 | 21392 | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0011 | 0.0023 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0090 |
| | | | | 400 | - | 1000 | $v_f$ (in/min) | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 |
| S | E 19 | 0.20 | 0.15 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| | E 20 | 0.20 | 0.15 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| | E 21 | 0.20 | 0.15 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 50 | - | 110 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| | E 22 | 0.30 | 0.15 | | 130 | | n (rev/min) | 7946 | 3973 | 1986 | 1324 | 993 | 795 | 662 | 497 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 70 | - | 190 | $v_f$ (in/min) | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

C330M

| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | | SLOTTING $Z_n = 3$ | 1.5 | 3 | 6 | 10 | 12 | 16 | 20 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 0.50 | 1.00 | | 122 | | n (rev/min) | 25890 | 12940 | 6470 | 3880 | 3240 | 2430 | 1940 | 1550 |
| | | | | | | | $f_z$ (mm) | 0.0054 | 0.0108 | 0.0216 | 0.0360 | 0.0432 | 0.0576 | 0.0720 | 0.0900 |
| | | | | 104 | - | 140 | $v_f$ (mm/min) | 419.4 | 419.3 | 419.3 | 419.0 | 419.9 | 419.9 | 419.0 | 418.5 |
| | E 3 - 4 | 0.40 | 1.00 | | 61 | | n (rev/min) | 12940 | 6470 | 3240 | 1940 | 1620 | 1210 | 970 | 780 |
| | | | | | | | $f_z$ (mm) | 0.0034 | 0.0067 | 0.0134 | 0.0224 | 0.0269 | 0.0358 | 0.0448 | 0.0560 |
| | | | | 43 | - | 79 | $v_f$ (mm/min) | 130.4 | 130.4 | 130.6 | 130.4 | 130.6 | 130.1 | 130.4 | 131.0 |
| | E 5 - 6 | 0.30 | 1.00 | | 30 | | n (rev/min) | 6370 | 3180 | 1590 | 950 | 800 | 600 | 480 | 380 |
| | | | | | | | $f_z$ (mm) | 0.0029 | 0.0058 | 0.0115 | 0.0192 | 0.0230 | 0.0307 | 0.0384 | 0.0480 |
| | | | | 12 | - | 49 | $v_f$ (mm/min) | 55.0 | 55.0 | 55.0 | 54.7 | 55.3 | 55.3 | 55.3 | 54.7 |
| M | E 8 - 9 | 0.50 | 1.00 | | 98 | | n (rev/min) | 20800 | 10400 | 5200 | 3120 | 2600 | 1950 | 1560 | 1250 |
| | | | | | | | $f_z$ (mm) | 0.0026 | 0.0053 | 0.0106 | 0.0176 | 0.0211 | 0.0282 | 0.0352 | 0.0440 |
| | | | | 88 | - | 107 | $v_f$ (mm/min) | 164.7 | 164.7 | 164.7 | 164.7 | 164.7 | 164.7 | 164.7 | 165.0 |
| | E 10 - 11 | 0.40 | 1.00 | | 88 | | n (rev/min) | 18670 | 9340 | 4670 | 2800 | 2330 | 1750 | 1400 | 1120 |
| | | | | | | | $f_z$ (mm) | 0.0024 | 0.0048 | 0.0096 | 0.0160 | 0.0192 | 0.0256 | 0.0320 | 0.0400 |
| | | | | 79 | - | 98 | $v_f$ (mm/min) | 134.4 | 134.5 | 134.5 | 134.4 | 134.2 | 134.4 | 134.4 | 134.4 |
| K | E 12 - 13 | 0.50 | 1.00 | | 82 | | n (rev/min) | 17400 | 8700 | 4350 | 2610 | 2180 | 1630 | 1310 | 1040 |
| | | | | | | | $f_z$ (mm) | 0.0070 | 0.0139 | 0.0278 | 0.0464 | 0.0557 | 0.0742 | 0.0928 | 0.1160 |
| | | | | 64 | - | 101 | $v_f$ (mm/min) | 363.3 | 363.3 | 363.3 | 363.3 | 364.1 | 363.0 | 364.7 | 361.9 |
| | E 14 - 15 | 0.30 | 1.00 | | 44 | | n (rev/min) | 9340 | 4670 | 2330 | 1400 | 1170 | 880 | 700 | 560 |
| | | | | | | | $f_z$ (mm) | 0.0041 | 0.0082 | 0.0163 | 0.0272 | 0.0326 | 0.0435 | 0.0544 | 0.0680 |
| | | | | 26 | - | 62 | $v_f$ (mm/min) | 114.3 | 114.3 | 114.1 | 114.2 | 114.6 | 114.9 | 114.2 | 114.2 |
| N | E / M / A 16 | 1.00 | 1.00 | | 213 | | n (rev/min) | 45200 | 22600 | 11300 | 6780 | 5650 | 4240 | 3390 | 2710 |
| | | | | | | | $f_z$ (mm) | 0.0108 | 0.0216 | 0.0432 | 0.0720 | 0.0864 | 0.1152 | 0.1440 | 0.1800 |
| | | | | 122 | - | 305 | $v_f$ (mm/min) | 1464.5 | 1464.5 | 1464.5 | 1464.5 | 1464.5 | 1465.3 | 1464.5 | 1463.4 |
| | E / M / A 17 | 1.00 | 1.00 | | 213 | | n (rev/min) | 45200 | 22600 | 11300 | 6780 | 5650 | 4240 | 3390 | 2710 |
| | | | | | | | $f_z$ (mm) | 0.0108 | 0.0216 | 0.0432 | 0.0720 | 0.0864 | 0.1152 | 0.1440 | 0.1800 |
| | | | | 122 | - | 305 | $v_f$ (mm/min) | 1464.5 | 1464.5 | 1464.5 | 1464.5 | 1464.5 | 1465.3 | 1464.5 | 1463.4 |
| S | E 19 | 0.20 | 1.00 | | 24 | | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.0036 | 0.0072 | 0.0144 | 0.0240 | 0.0288 | 0.0384 | 0.0480 | 0.0600 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 55.0 | 55.1 | 54.9 | 54.7 | 55.3 | 55.3 | 54.7 | 55.8 |
| | E 20 | 0.20 | 1.00 | | 24 | | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.0036 | 0.0072 | 0.0144 | 0.0240 | 0.0288 | 0.0384 | 0.0480 | 0.0600 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 55.0 | 55.1 | 54.9 | 54.7 | 55.3 | 55.3 | 54.7 | 55.8 |
| | E 21 | 0.20 | 1.00 | | 24 | | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.0036 | 0.0072 | 0.0144 | 0.0240 | 0.0288 | 0.0384 | 0.0480 | 0.0600 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 55.0 | 55.1 | 54.9 | 54.7 | 55.3 | 55.3 | 54.7 | 55.8 |
| | E 22 | 0.30 | 1.00 | | 40 | | n (rev/min) | 8490 | 4240 | 2120 | 1270 | 1060 | 800 | 640 | 510 |
| | | | | | | | $f_z$ (mm) | 0.0034 | 0.0067 | 0.0134 | 0.0224 | 0.0269 | 0.0358 | 0.0448 | 0.0560 |
| | | | | 21 | - | 58 | $v_f$ (mm/min) | 85.6 | 85.5 | 85.5 | 85.3 | 85.5 | 86.0 | 86.0 | 85.7 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

C330M

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | | | $Z_n = 3$ | | | | | | | |
| | | | | | | | | 1.5 | 3 | 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 1.00 | 0.30 | | 122 | | n (rev/min) | 25890 | 12940 | 6470 | 3880 | 3240 | 2430 | 1940 | 1550 |
| | | | | | | | $f_z$ (mm) | 0.0068 | 0.0135 | 0.0270 | 0.0450 | 0.0540 | 0.0720 | 0.0900 | 0.1125 |
| | | | | 104 | - | 140 | $v_f$ (mm/min) | 524.3 | 524.1 | 524.1 | 523.8 | 524.9 | 524.9 | 523.8 | 523.1 |
| | E 3 - 4 | 1.00 | 0.30 | | 61 | | n (rev/min) | 12940 | 6470 | 3240 | 1940 | 1620 | 1210 | 970 | 780 |
| | | | | | | | $f_z$ (mm) | 0.0042 | 0.0084 | 0.0168 | 0.0280 | 0.0336 | 0.0448 | 0.0560 | 0.0700 |
| | | | | 43 | - | 79 | $v_f$ (mm/min) | 163.0 | 163.0 | 163.3 | 163.0 | 163.3 | 162.6 | 163.0 | 163.8 |
| | E 5 - 6 | 1.00 | 0.20 | | 30 | | n (rev/min) | 6370 | 3180 | 1590 | 950 | 800 | 600 | 480 | 380 |
| | | | | | | | $f_z$ (mm) | 0.0036 | 0.0072 | 0.0144 | 0.0240 | 0.0288 | 0.0384 | 0.0480 | 0.0600 |
| | | | | 12 | - | 49 | $v_f$ (mm/min) | 68.8 | 68.7 | 68.7 | 68.4 | 69.1 | 69.1 | 69.1 | 68.4 |
| M | E 8 - 9 | 0.50 | 0.30 | | 98 | | n (rev/min) | 20800 | 10400 | 5200 | 3120 | 2600 | 1950 | 1560 | 1250 |
| | | | | | | | $f_z$ (mm) | 0.0033 | 0.0066 | 0.0132 | 0.0220 | 0.0264 | 0.0352 | 0.0440 | 0.0550 |
| | | | | 88 | - | 107 | $v_f$ (mm/min) | 205.9 | 205.9 | 205.9 | 205.9 | 205.9 | 205.9 | 205.9 | 206.3 |
| | E 10 - 11 | 0.30 | 0.20 | | 88 | | n (rev/min) | 18670 | 9340 | 4670 | 2800 | 2330 | 1750 | 1400 | 1120 |
| | | | | | | | $f_z$ (mm) | 0.0030 | 0.0060 | 0.0120 | 0.0200 | 0.0240 | 0.0320 | 0.0400 | 0.0500 |
| | | | | 79 | - | 98 | $v_f$ (mm/min) | 168.0 | 168.1 | 168.1 | 168.0 | 167.8 | 168.0 | 168.0 | 168.0 |
| K | E 12 - 13 | 1.00 | 0.50 | | 82 | | n (rev/min) | 17400 | 8700 | 4350 | 2610 | 2180 | 1630 | 1310 | 1040 |
| | | | | | | | $f_z$ (mm) | 0.0087 | 0.0174 | 0.0348 | 0.0580 | 0.0696 | 0.0928 | 0.1160 | 0.1450 |
| | | | | 64 | - | 101 | $v_f$ (mm/min) | 454.1 | 454.1 | 454.1 | 454.1 | 455.2 | 453.8 | 455.9 | 452.4 |
| | E 14 - 15 | 0.50 | 0.30 | | 44 | | n (rev/min) | 9340 | 4670 | 2330 | 1400 | 1170 | 880 | 700 | 560 |
| | | | | | | | $f_z$ (mm) | 0.0051 | 0.0102 | 0.0204 | 0.0340 | 0.0408 | 0.0544 | 0.0680 | 0.0850 |
| | | | | 26 | - | 62 | $v_f$ (mm/min) | 142.9 | 142.9 | 142.6 | 142.8 | 143.2 | 143.6 | 142.8 | 142.8 |
| N | E / M / A 16 | 2.00 | 0.50 | | 213 | | n (rev/min) | 45200 | 22600 | 11300 | 6780 | 5650 | 4240 | 3390 | 2710 |
| | | | | | | | $f_z$ (mm) | 0.0135 | 0.0270 | 0.0540 | 0.0900 | 0.1080 | 0.1440 | 0.1800 | 0.2250 |
| | | | | 122 | - | 305 | $v_f$ (mm/min) | 1830.6 | 1830.6 | 1830.6 | 1830.6 | 1830.6 | 1831.7 | 1830.6 | 1829.3 |
| | E / M / A 17 | 2.00 | 0.50 | | 213 | | n (rev/min) | 45200 | 22600 | 11300 | 6780 | 5650 | 4240 | 3390 | 2710 |
| | | | | | | | $f_z$ (mm) | 0.0135 | 0.0270 | 0.0540 | 0.0900 | 0.1080 | 0.1440 | 0.1800 | 0.2250 |
| | | | | 122 | - | 305 | $v_f$ (mm/min) | 1830.6 | 1830.6 | 1830.6 | 1830.6 | 1830.6 | 1831.7 | 1830.6 | 1829.3 |
| S | E 19 | 0.20 | 0.10 | | 24 | | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.0045 | 0.0090 | 0.0180 | 0.0300 | 0.0360 | 0.0480 | 0.0600 | 0.0750 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 68.7 | 68.9 | 68.6 | 68.4 | 69.1 | 69.1 | 68.4 | 69.8 |
| | E 20 | 0.20 | 0.10 | | 24 | | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.0045 | 0.0090 | 0.0180 | 0.0300 | 0.0360 | 0.0480 | 0.0600 | 0.0750 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 68.7 | 68.9 | 68.6 | 68.4 | 69.1 | 69.1 | 68.4 | 69.8 |
| | E 21 | 0.20 | 0.10 | | 24 | | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.0045 | 0.0090 | 0.0180 | 0.0300 | 0.0360 | 0.0480 | 0.0600 | 0.0750 |
| | | | | 15 | - | 34 | $v_f$ (mm/min) | 68.7 | 68.9 | 68.6 | 68.4 | 69.1 | 69.1 | 68.4 | 69.8 |
| | E 22 | 0.30 | 0.20 | | 40 | | n (rev/min) | 8490 | 4240 | 2120 | 1270 | 1060 | 800 | 640 | 510 |
| | | | | | | | $f_z$ (mm) | 0.0042 | 0.0084 | 0.0168 | 0.0280 | 0.0336 | 0.0448 | 0.0560 | 0.0700 |
| | | | | 21 | - | 58 | $v_f$ (mm/min) | 107.0 | 106.8 | 106.8 | 106.7 | 106.8 | 107.5 | 107.5 | 107.1 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**C430 / C430R / CNC430 / CD430 / CSD430**

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | | | | | |
| | | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 0.50 | 1.00 | | 400 | | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0005 | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | | | 340 | - | 460 | $v_f$ (in/min) | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| | E 3 - 4 | 0.40 | 1.00 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 |
| | E 5 - 6 | 0.30 | 1.00 | | 100 | | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0019 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 |
| M | E 8 - 9 | 0.50 | 1.00 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0018 |
| | | | | 290 | - | 350 | $v_f$ (in/min) | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 |
| | E 10 - 11 | 0.40 | 1.00 | | 250 | | n (rev/min) | 15280 | 7640 | 3820 | 2547 | 1910 | 1528 | 1273 | 955 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| | | | | 220 | - | 280 | $v_f$ (in/min) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
| K | E 12 - 13 | 0.50 | 1.00 | | 270 | | n (rev/min) | 16502 | 8251 | 4126 | 2750 | 2063 | 1650 | 1375 | 1031 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0012 | 0.0017 | 0.0023 | 0.0029 | 0.0035 | 0.0046 |
| | | | | 210 | - | 330 | $v_f$ (in/min) | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 |
| | E 14 - 15 | 0.30 | 1.00 | | 145 | | n (rev/min) | 8862 | 4431 | 2216 | 1477 | 1108 | 886 | 739 | 554 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0020 | 0.0027 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| S | E 19 | 0.20 | 1.00 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| | E 20 | 0.20 | 1.00 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| | E 21 | 0.20 | 1.00 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| | E 22 | 0.20 | 1.00 | | 112 | | n (rev/min) | 6845 | 3423 | 1711 | 1141 | 856 | 685 | 570 | 428 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 52 | - | 172 | $v_f$ (in/min) | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**C430 / C430R / CNC430 / CD430 / CSD430**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (sf / min) | | | $Z_n = 4$ | | | | | | | |
| | | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.00 | 0.30 | | 400 | | n (rev/min) | 24448 | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 340 | - | 460 | $v_f$ (in/min) | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 |
| | E 3 - 4 | 1.00 | 0.30 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 |
| | E 5 - 6 | 1.00 | 0.20 | | 100 | | n (rev/min) | 6112 | 3056 | 1528 | 1019 | 764 | 611 | 509 | 382 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| M | E 8 - 9 | 0.50 | 0.30 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 290 | - | 350 | $v_f$ (in/min) | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 |
| | E 10 - 11 | 0.30 | 0.20 | | 250 | | n (rev/min) | 15280 | 7640 | 3820 | 2547 | 1910 | 1528 | 1273 | 955 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 |
| | | | | 220 | - | 280 | $v_f$ (in/min) | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 |
| K | E 12 - 13 | 1.00 | 0.50 | | 270 | | n (rev/min) | 16502 | 8251 | 4126 | 2750 | 2063 | 1650 | 1375 | 1031 |
| | | | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0015 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |
| | | | | 210 | - | 330 | $v_f$ (in/min) | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 |
| | E 14 - 15 | 0.50 | 0.30 | | 145 | | n (rev/min) | 8862 | 4431 | 2216 | 1477 | 1108 | 886 | 739 | 554 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| S | E 19 | 0.20 | 0.10 | | 120 | | n (rev/min) | 7334 | 3667 | 1834 | 1222 | 917 | 733 | 611 | 458 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 90 | - | 150 | $v_f$ (in/min) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 |
| | E 20 | 0.20 | 0.10 | | 120 | | n (rev/min) | 7334 | 3667 | 1834 | 1222 | 917 | 733 | 611 | 458 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 90 | - | 150 | $v_f$ (in/min) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 |
| | E 21 | 0.20 | 0.10 | | 120 | | n (rev/min) | 7334 | 3667 | 1834 | 1222 | 917 | 733 | 611 | 458 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 90 | - | 150 | $v_f$ (in/min) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 |
| | E 22 | 0.30 | 0.20 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 20 | - | 140 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

**CB430 / CNCB430 / CSDB430**

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | | | | | |
| | | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 0.50 | 1.00 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0005 | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | | | 260 | - | 380 | $v_f$ (in/min) | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 |
| | E 3 - 4 | 0.40 | 1.00 | | 160 | | n (rev/min) | 9779 | 4890 | 2445 | 1630 | 1222 | 978 | 815 | 611 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 100 | - | 220 | $v_f$ (in/min) | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| | E 5 - 6 | 0.30 | 1.00 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0019 |
| | | | | 20 | - | 140 | $v_f$ (in/min) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| M | E 8 - 9 | 0.50 | 1.00 | | 256 | | n (rev/min) | 15647 | 7823 | 3912 | 2608 | 1956 | 1565 | 1304 | 978 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0018 |
| | | | | 226 | - | 286 | $v_f$ (in/min) | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| | E 10 - 11 | 0.40 | 1.00 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| | | | | 170 | - | 230 | $v_f$ (in/min) | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 |
| K | E 12 - 13 | 0.50 | 1.00 | | 216 | | n (rev/min) | 13202 | 6601 | 3300 | 2200 | 1650 | 1320 | 1100 | 825 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0012 | 0.0017 | 0.0023 | 0.0029 | 0.0035 | 0.0046 |
| | | | | 156 | - | 276 | $v_f$ (in/min) | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |
| | E 14 - 15 | 0.30 | 1.00 | | 116 | | n (rev/min) | 7090 | 3545 | 1772 | 1182 | 886 | 709 | 591 | 443 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0020 | 0.0027 |
| | | | | 56 | - | 176 | $v_f$ (in/min) | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |
| S | E 19 | 0.10 | 1.00 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| | E 20 | 0.10 | 1.00 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| | E 21 | 0.10 | 1.00 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| | E 22 | 0.20 | 1.00 | | 112 | | n (rev/min) | 6845 | 3423 | 1711 | 1141 | 856 | 685 | 570 | 428 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 52 | - | 172 | $v_f$ (in/min) | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**CB430 / CNCB430 / CSDB430**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | | | | | |
| | | | | | | | | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 1.00 | 0.30 | | 320 | | n (rev/min) | 19558 | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 | 1222 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0006 | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 |
| | | | | 260 | - | 380 | $v_f$ (in/min) | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| | E 3 - 4 | 1.00 | 0.30 | | 160 | | n (rev/min) | 9779 | 4890 | 2445 | 1630 | 1222 | 978 | 815 | 611 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | | | 100 | - | 220 | $v_f$ (in/min) | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 |
| | E 5 - 6 | 1.00 | 0.20 | | 80 | | n (rev/min) | 4890 | 2445 | 1222 | 815 | 611 | 489 | 407 | 306 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 20 | - | 140 | $v_f$ (in/min) | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 |
| M | E 8 - 9 | 0.50 | 0.30 | | 256 | | n (rev/min) | 15647 | 7823 | 3912 | 2608 | 1956 | 1565 | 1304 | 978 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 226 | - | 286 | $v_f$ (in/min) | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 |
| | E 10 - 11 | 0.30 | 0.20 | | 200 | | n (rev/min) | 12224 | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 | 764 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 |
| | | | | 170 | - | 230 | $v_f$ (in/min) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
| K | E 12 - 13 | 1.00 | 0.50 | | 216 | | n (rev/min) | 13202 | 6601 | 3300 | 2200 | 1650 | 1320 | 1100 | 825 |
| | | | | | | | $f_z$ (in) | 0.0004 | 0.0007 | 0.0015 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |
| | | | | 156 | - | 276 | $v_f$ (in/min) | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 |
| | E 14 - 15 | 0.50 | 0.30 | | 116 | | n (rev/min) | 7090 | 3545 | 1772 | 1182 | 886 | 709 | 591 | 443 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0009 | 0.0013 | 0.0017 | 0.0021 | 0.0026 | 0.0034 |
| | | | | 56 | - | 176 | $v_f$ (in/min) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| S | E 19 | 0.30 | 0.10 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| | E 20 | 0.30 | 0.10 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| | E 21 | 0.30 | 0.10 | | 70 | | n (rev/min) | 4278 | 2139 | 1070 | 713 | 535 | 428 | 357 | 267 |
| | | | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 40 | - | 100 | $v_f$ (in/min) | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| | E 22 | 0.40 | 0.20 | | 112 | | n (rev/min) | 6845 | 3423 | 1711 | 1141 | 856 | 685 | 570 | 428 |
| | | | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0022 |
| | | | | 52 | - | 172 | $v_f$ (in/min) | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

C430M

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | | | $Z_n = 4$ | | | | | | | |
| | | | | | | | | 1.5 | 3 | 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 0.50 | 1.00 | | 122 | | n (rev/min) | 25890 | 12940 | 6470 | 3880 | 3240 | 2430 | 1940 | 1550 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 104 | - | 140 | $v_f$ (mm/min) | 559 | 559 | 559 | 559 | 560 | 560 | 559 | 558 |
| | E 3 - 4 | 0.40 | 1.00 | | 61 | | n (rev/min) | 12940 | 6470 | 3240 | 1940 | 1620 | 1210 | 970 | 780 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.007 | 0.013 | 0.022 | 0.027 | 0.036 | 0.045 | 0.056 |
| | | | | 43 | - | 79 | $v_f$ (mm/min) | 174 | 174 | 174 | 174 | 174 | 173 | 174 | 175 |
| | E 5 - 6 | 0.30 | 1.00 | | 30 | | n (rev/min) | 6370 | 3180 | 1590 | 950 | 800 | 600 | 480 | 380 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.006 | 0.012 | 0.019 | 0.023 | 0.031 | 0.038 | 0.048 |
| | | | | 12 | - | 49 | $v_f$ (mm/min) | 73 | 73 | 73 | 73 | 74 | 74 | 74 | 73 |
| M | E 8 - 9 | 0.50 | 1.00 | | 98 | | n (rev/min) | 20800 | 10400 | 5200 | 3120 | 2600 | 1950 | 1560 | 1250 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.011 | 0.018 | 0.021 | 0.028 | 0.035 | 0.044 |
| | | | | 88 | - | 107 | $v_f$ (mm/min) | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |
| | E 10 - 11 | 0.40 | 1.00 | | 76 | | n (rev/min) | 16130 | 8060 | 4030 | 2420 | 2020 | 1510 | 1210 | 970 |
| | | | | | | | $f_z$ (mm) | 0.002 | 0.005 | 0.010 | 0.016 | 0.019 | 0.026 | 0.032 | 0.040 |
| | | | | 67 | - | 85 | $v_f$ (mm/min) | 155 | 155 | 155 | 155 | 155 | 155 | 155 | 155 |
| K | E 12 - 13 | 0.50 | 1.00 | | 82 | | n (rev/min) | 17400 | 8700 | 4350 | 2610 | 2180 | 1630 | 1310 | 1040 |
| | | | | | | | $f_z$ (mm) | 0.007 | 0.014 | 0.028 | 0.046 | 0.056 | 0.074 | 0.093 | 0.116 |
| | | | | 64 | - | 101 | $v_f$ (mm/min) | 484 | 484 | 484 | 484 | 486 | 484 | 486 | 483 |
| | E 14 - 15 | 0.30 | 1.00 | | 44 | | n (rev/min) | 9340 | 4670 | 2330 | 1400 | 1170 | 880 | 700 | 560 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.008 | 0.016 | 0.027 | 0.033 | 0.044 | 0.054 | 0.068 |
| | | | | 26 | - | 62 | $v_f$ (mm/min) | 152 | 152 | 152 | 152 | 153 | 153 | 152 | 152 |
| S | E 19 | 0.20 | 1.00 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 420 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.009 | 0.018 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 80 | 80 | 80 | 80 | 81 | 81 | 79 | 81 |
| | E 20 | 0.20 | 1.00 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 420 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.009 | 0.018 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 80 | 80 | 80 | 80 | 81 | 81 | 79 | 81 |
| | E 21 | 0.20 | 1.00 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 420 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.009 | 0.018 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 80 | 80 | 80 | 80 | 81 | 81 | 79 | 81 |
| | E 22 | 0.20 | 1.00 | | 34 | | n (rev/min) | 7220 | 3610 | 1800 | 1080 | 900 | 680 | 540 | 430 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.008 | 0.017 | 0.028 | 0.034 | 0.045 | 0.056 | 0.070 |
| | | | | 16 | - | 52 | $v_f$ (mm/min) | 121 | 121 | 121 | 121 | 121 | 122 | 121 | 120 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

C430M

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | | $Z_n = 4$ | 1.5 | 3 | 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 1.00 | 0.30 | | 122 | | n (rev/min) | 25890 | 12940 | 6470 | 3880 | 3240 | 2430 | 1940 | 1550 |
| | | | | | | | $f_z$ (mm) | 0.007 | 0.014 | 0.027 | 0.045 | 0.054 | 0.072 | 0.090 | 0.113 |
| | | | | 104 | - | 140 | $v_f$ (mm/min) | 699 | 699 | 699 | 698 | 700 | 700 | 698 | 698 |
| | E 3 - 4 | 1.00 | 0.30 | | 61 | | n (rev/min) | 12940 | 6470 | 3240 | 1940 | 1620 | 1210 | 970 | 780 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.008 | 0.017 | 0.028 | 0.034 | 0.045 | 0.056 | 0.070 |
| | | | | 43 | - | 79 | $v_f$ (mm/min) | 217 | 217 | 218 | 217 | 218 | 217 | 217 | 218 |
| | E 5 - 6 | 1.00 | 0.20 | | 30 | | n (rev/min) | 6370 | 3180 | 1590 | 950 | 800 | 600 | 480 | 380 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.038 | 0.048 | 0.060 |
| | | | | 12 | - | 49 | $v_f$ (mm/min) | 92 | 92 | 92 | 91 | 92 | 92 | 92 | 91 |
| M | E 8 - 9 | 0.50 | 0.30 | | 98 | | n (rev/min) | 20800 | 10400 | 5200 | 3120 | 2600 | 1950 | 1560 | 1250 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.007 | 0.013 | 0.022 | 0.026 | 0.035 | 0.044 | 0.055 |
| | | | | 88 | - | 107 | $v_f$ (mm/min) | 275 | 275 | 275 | 275 | 275 | 275 | 275 | 275 |
| | E 10 - 11 | 0.30 | 0.20 | | 76 | | n (rev/min) | 16130 | 8060 | 4030 | 2420 | 2020 | 1510 | 1210 | 970 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.006 | 0.012 | 0.020 | 0.024 | 0.032 | 0.040 | 0.050 |
| | | | | 67 | - | 85 | $v_f$ (mm/min) | 194 | 193 | 193 | 194 | 194 | 193 | 194 | 194 |
| K | E 12 - 13 | 1.00 | 0.50 | | 82 | | n (rev/min) | 17400 | 8700 | 4350 | 2610 | 2180 | 1630 | 1310 | 1040 |
| | | | | | | | $f_z$ (mm) | 0.009 | 0.017 | 0.035 | 0.058 | 0.070 | 0.093 | 0.116 | 0.145 |
| | | | | 64 | - | 101 | $v_f$ (mm/min) | 606 | 606 | 606 | 606 | 607 | 605 | 608 | 603 |
| | E 14 - 15 | 0.50 | 0.30 | | 44 | | n (rev/min) | 9340 | 4670 | 2330 | 1400 | 1170 | 880 | 700 | 560 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.010 | 0.020 | 0.034 | 0.041 | 0.054 | 0.068 | 0.085 |
| | | | | 26 | - | 62 | $v_f$ (mm/min) | 191 | 191 | 190 | 190 | 191 | 191 | 190 | 190 |
| S | E 19 | 0.20 | 0.10 | | 37 | | n (rev/min) | 7850 | 3930 | 1960 | 1180 | 980 | 740 | 590 | 470 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.038 | 0.048 | 0.060 |
| | | | | 27 | - | 46 | $v_f$ (mm/min) | 113 | 113 | 113 | 113 | 113 | 114 | 113 | 113 |
| | E 20 | 0.20 | 0.10 | | 37 | | n (rev/min) | 7850 | 3930 | 1960 | 1180 | 980 | 740 | 590 | 470 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.038 | 0.048 | 0.060 |
| | | | | 27 | - | 46 | $v_f$ (mm/min) | 113 | 113 | 113 | 113 | 113 | 114 | 113 | 113 |
| | E 21 | 0.20 | 0.10 | | 37 | | n (rev/min) | 7850 | 3930 | 1960 | 1180 | 980 | 740 | 590 | 470 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.038 | 0.048 | 0.060 |
| | | | | 27 | - | 46 | $v_f$ (mm/min) | 113 | 113 | 113 | 113 | 113 | 114 | 113 | 113 |
| | E 22 | 0.30 | 0.20 | | 24 | | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.007 | 0.013 | 0.022 | 0.027 | 0.036 | 0.045 | 0.056 |
| | | | | 6 | - | 43 | $v_f$ (mm/min) | 68 | 69 | 68 | 68 | 69 | 69 | 68 | 69 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**CB430M**

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | | $Z_n = 4$ | 1.5 | 3 | 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 0.50 | 1.00 | | 98 | | n (rev/min) | 20800 | 10400 | 5200 | 3120 | 2600 | 1950 | 1560 | 1250 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.011 | 0.022 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | | | 79 | - | 116 | $v_f$ (mm/min) | 449 | 449 | 449 | 449 | 449 | 449 | 449 | 450 |
| | E 3 - 4 | 0.40 | 1.00 | | 49 | | n (rev/min) | 10400 | 5200 | 2600 | 1560 | 1300 | 970 | 780 | 620 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.007 | 0.013 | 0.022 | 0.027 | 0.036 | 0.045 | 0.056 |
| | | | | 30 | - | 67 | $v_f$ (mm/min) | 140 | 140 | 140 | 140 | 140 | 139 | 140 | 139 |
| | E 5 - 6 | 0.30 | 1.00 | | 24 | | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.006 | 0.012 | 0.019 | 0.023 | 0.031 | 0.038 | 0.048 |
| | | | | 6 | - | 43 | $v_f$ (mm/min) | 59 | 59 | 59 | 58 | 59 | 59 | 58 | 60 |
| M | E 8 - 9 | 0.50 | 1.00 | | 78 | | n (rev/min) | 16550 | 8280 | 4140 | 2480 | 2070 | 1550 | 1240 | 990 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.005 | 0.011 | 0.018 | 0.021 | 0.028 | 0.035 | 0.044 |
| | | | | 69 | - | 87 | $v_f$ (mm/min) | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 174 |
| | E 10 - 11 | 0.40 | 1.00 | | 61 | | n (rev/min) | 12940 | 6470 | 3240 | 1940 | 1620 | 1210 | 970 | 780 |
| | | | | | | | $f_z$ (mm) | 0.002 | 0.005 | 0.010 | 0.016 | 0.019 | 0.026 | 0.032 | 0.040 |
| | | | | 52 | - | 70 | $v_f$ (mm/min) | 124 | 124 | 124 | 124 | 124 | 124 | 124 | 125 |
| K | E 12 - 13 | 0.50 | 1.00 | | 66 | | n (rev/min) | 14010 | 7000 | 3500 | 2100 | 1750 | 1310 | 1050 | 840 |
| | | | | | | | $f_z$ (mm) | 0.007 | 0.014 | 0.028 | 0.046 | 0.056 | 0.074 | 0.093 | 0.116 |
| | | | | 48 | - | 84 | $v_f$ (mm/min) | 390 | 390 | 390 | 390 | 390 | 389 | 390 | 390 |
| | E 14 - 15 | 0.30 | 1.00 | | 35 | | n (rev/min) | 7430 | 3710 | 1860 | 1110 | 930 | 700 | 560 | 450 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.008 | 0.016 | 0.027 | 0.033 | 0.044 | 0.054 | 0.068 |
| | | | | 17 | - | 54 | $v_f$ (mm/min) | 121 | 121 | 121 | 121 | 121 | 122 | 122 | 122 |
| S | E 19 | 0.10 | 1.00 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 420 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.009 | 0.018 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 80 | 80 | 80 | 80 | 81 | 81 | 79 | 81 |
| | E 20 | 0.10 | 1.00 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 420 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.0045 | 0.009 | 0.018 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 80 | 80 | 80 | 80 | 81 | 81 | 79 | 81 |
| | E 21 | 0.10 | 1.00 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 420 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.009 | 0.018 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 80 | 80 | 80 | 80 | 81 | 81 | 79 | 81 |
| | E 22 | 0.20 | 1.00 | | 34 | | n (rev/min) | 7220 | 3610 | 1800 | 1080 | 900 | 680 | 540 | 430 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.008 | 0.017 | 0.028 | 0.034 | 0.045 | 0.056 | 0.070 |
| | | | | 16 | - | 52 | $v_f$ (mm/min) | 121 | 121 | 121 | 121 | 121 | 122 | 121 | 120 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**CB430M**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (m / min) | | | $Z_n = 4$ | | | | | | | |
| | | | | | | | | 1.5 | 3 | 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 1.00 | 0.30 | | 98 | | n (rev/min) | 20800 | 10400 | 5200 | 3120 | 2600 | 1950 | 1560 | 1250 |
| | | | | | | | $f_z$ (mm) | 0.007 | 0.014 | 0.027 | 0.045 | 0.054 | 0.072 | 0.090 | 0.113 |
| | | | | 79 | - | 116 | $v_f$ (mm/min) | 562 | 562 | 562 | 562 | 562 | 562 | 562 | 563 |
| | E 3 - 4 | 1.00 | 0.30 | | 49 | | n (rev/min) | 10400 | 5200 | 2600 | 1560 | 1300 | 970 | 780 | 620 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.008 | 0.017 | 0.028 | 0.034 | 0.045 | 0.056 | 0.070 |
| | | | | 30 | - | 67 | $v_f$ (mm/min) | 175 | 175 | 175 | 175 | 175 | 174 | 175 | 174 |
| | E 5 - 6 | 1.00 | 0.20 | | 24 | | n (rev/min) | 5090 | 2550 | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.038 | 0.048 | 0.060 |
| | | | | 6 | - | 43 | $v_f$ (mm/min) | 73 | 73 | 73 | 73 | 74 | 74 | 73 | 74 |
| M | E 8 - 9 | 0.50 | 0.30 | | 78 | | n (rev/min) | 16550 | 8280 | 4140 | 2480 | 2070 | 1550 | 1240 | 990 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.007 | 0.013 | 0.022 | 0.026 | 0.035 | 0.044 | 0.055 |
| | | | | 69 | - | 87 | $v_f$ (mm/min) | 218 | 219 | 219 | 218 | 219 | 218 | 218 | 218 |
| | E 10 - 11 | 0.30 | 0.20 | | 61 | | n (rev/min) | 12940 | 6470 | 3240 | 1940 | 1620 | 1210 | 970 | 780 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.006 | 0.012 | 0.020 | 0.024 | 0.032 | 0.040 | 0.050 |
| | | | | 52 | - | 70 | $v_f$ (mm/min) | 155 | 155 | 156 | 155 | 156 | 155 | 155 | 156 |
| K | E 12 - 13 | 1.00 | 0.50 | | 66 | | n (rev/min) | 14010 | 7000 | 3500 | 2100 | 1750 | 1310 | 1050 | 840 |
| | | | | | | | $f_z$ (mm) | 0.009 | 0.017 | 0.035 | 0.058 | 0.070 | 0.093 | 0.116 | 0.145 |
| | | | | 48 | - | 84 | $v_f$ (mm/min) | 488 | 487 | 487 | 487 | 487 | 486 | 487 | 487 |
| | E 14 - 15 | 0.50 | 0.30 | | 35 | | n (rev/min) | 7430 | 3710 | 1860 | 1110 | 930 | 700 | 560 | 450 |
| | | | | | | | $f_z$ (mm) | 0.005 | 0.010 | 0.020 | 0.034 | 0.041 | 0.054 | 0.068 | 0.085 |
| | | | | 17 | - | 54 | $v_f$ (mm/min) | 152 | 151 | 152 | 151 | 152 | 152 | 152 | 153 |
| S | E 19 | 0.30 | 0.10 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 420 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.038 | 0.048 | 0.060 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 64 | 64 | 64 | 64 | 65 | 65 | 63 | 65 |
| | E 20 | 0.30 | 0.10 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 420 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.038 | 0.048 | 0.060 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 64 | 64 | 64 | 64 | 65 | 65 | 63 | 65 |
| | E 21 | 0.30 | 0.10 | | 21 | | n (rev/min) | 4460 | 2230 | 1110 | 670 | 560 | 420 | 330 | 270 |
| | | | | | | | $f_z$ (mm) | 0.004 | 0.007 | 0.014 | 0.024 | 0.029 | 0.038 | 0.048 | 0.060 |
| | | | | 12 | - | 30 | $v_f$ (mm/min) | 64 | 64 | 64 | 64 | 65 | 65 | 63 | 65 |
| | E 22 | 0.40 | 0.20 | | 34 | | n (rev/min) | 7220 | 3610 | 1800 | 1080 | 900 | 680 | 540 | 430 |
| | | | | | | | $f_z$ (mm) | 0.003 | 0.007 | 0.013 | 0.022 | 0.027 | 0.036 | 0.045 | 0.056 |
| | | | | 16 | - | 52 | $v_f$ (mm/min) | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 96 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

# MICRO END MILLS- ME230

SOLID CARBIDE

HELIX 30°

SQUARE END

CENTER CUTTING

- Sub micron grain carbide
- .005" - .055" in .001" increments
- .060" - .120" in .005" increments

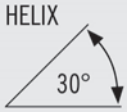
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59570 | ME230-0.005-F3-S.0-Z2 | .005 | 1/8 | .0150 | 1-1/2 | 2 | |
| N59571 | ME230-0.006-F3-S.0-Z2 | .006 | 1/8 | .0180 | 1-1/2 | 2 | |
| N59572 | ME230-0.007-F3-S.0-Z2 | .007 | 1/8 | .0210 | 1-1/2 | 2 | |
| N59573 | ME230-0.008-F3-S.0-Z2 | .008 | 1/8 | .0240 | 1-1/2 | 2 | |
| N59574 | ME230-0.009-F3-S.0-Z2 | .009 | 1/8 | .0270 | 1-1/2 | 2 | |
| N59575 | ME230-0.010-F3-S.0-Z2 | .010 | 1/8 | .0300 | 1-1/2 | 2 | |
| N59576 | ME230-0.011-F3-S.0-Z2 | .011 | 1/8 | .0330 | 1-1/2 | 2 | |
| N59577 | ME230-0.012-F3-S.0-Z2 | .012 | 1/8 | .0360 | 1-1/2 | 2 | |
| N59578 | ME230-0.013-F3-S.0-Z2 | .013 | 1/8 | .0390 | 1-1/2 | 2 | |
| N59579 | ME230-0.014-F3-S.0-Z2 | .014 | 1/8 | .0420 | 1-1/2 | 2 | |
| N59580 | ME230-0.015-F3-S.0-Z2 | .015 | 1/8 | .0450 | 1-1/2 | 2 | |
| N59581 | ME230-0.016-F3-S.0-Z2 | .016 | 1/8 | .0480 | 1-1/2 | 2 | |
| N59582 | ME230-0.017-F3-S.0-Z2 | .017 | 1/8 | .0510 | 1-1/2 | 2 | |
| N59583 | ME230-0.018-F3-S.0-Z2 | .018 | 1/8 | .0540 | 1-1/2 | 2 | |
| N59584 | ME230-0.019-F3-S.0-Z2 | .019 | 1/8 | .0570 | 1-1/2 | 2 | |
| N59585 | ME230-0.020-F3-S.0-Z2 | .020 | 1/8 | .0600 | 1-1/2 | 2 | |
| N59586 | ME230-0.021-F3-S.0-Z2 | .021 | 1/8 | .0630 | 1-1/2 | 2 | |
| N59587 | ME230-0.022-F3-S.0-Z2 | .022 | 1/8 | .0660 | 1-1/2 | 2 | |
| N59588 | ME230-0.023-F3-S.0-Z2 | .023 | 1/8 | .0690 | 1-1/2 | 2 | |
| N59589 | ME230-0.024-F3-S.0-Z2 | .024 | 1/8 | .0720 | 1-1/2 | 2 | |
| N59590 | ME230-0.025-F3-S.0-Z2 | .025 | 1/8 | .0750 | 1-1/2 | 2 | |
| N59591 | ME230-0.026-F3-S.0-Z2 | .026 | 1/8 | .0780 | 1-1/2 | 2 | |
| N59592 | ME230-0.027-F3-S.0-Z2 | .027 | 1/8 | .0810 | 1-1/2 | 2 | |
| N59593 | ME230-0.028-F3-S.0-Z2 | .028 | 1/8 | .0840 | 1-1/2 | 2 | |
| N59594 | ME230-0.029-F3-S.0-Z2 | .029 | 1/8 | .0870 | 1-1/2 | 2 | |
| N59595 | ME230-0.030-F3-S.0-Z2 | .030 | 1/8 | .0900 | 1-1/2 | 2 | |
| N59596 | ME230-0.031-F3-S.0-Z2 | .031 | 1/8 | .0930 | 1-1/2 | 2 | |
| N59597 | ME230-0.032-F3-S.0-Z2 | .032 | 1/8 | .0960 | 1-1/2 | 2 | |
| N59598 | ME230-0.033-F3-S.0-Z2 | .033 | 1/8 | .0990 | 1-1/2 | 2 | |
| N59599 | ME230-0.034-F3-S.0-Z2 | .034 | 1/8 | .1020 | 1-1/2 | 2 | |
| N59600 | ME230-0.035-F3-S.0-Z2 | .035 | 1/8 | .1050 | 1-1/2 | 2 | |
| N59601 | ME230-0.036-F3-S.0-Z2 | .036 | 1/8 | .1080 | 1-1/2 | 2 | |
| N59602 | ME230-0.037-F3-S.0-Z2 | .037 | 1/8 | .1110 | 1-1/2 | 2 | |
| N59603 | ME230-0.038-F3-S.0-Z2 | .038 | 1/8 | .1140 | 1-1/2 | 2 | |
| N59604 | ME230-0.039-F3-S.0-Z2 | .039 | 1/8 | .1170 | 1-1/2 | 2 | |

DISCOUNT CODE D42

# MICRO END MILLS- ME230

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- Sub micron grain carbide
- .005" - .055" in .001" increments
- .060" - .120" in .005" increments

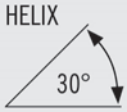
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59605 | ME230-0.040-F3-S.0-Z2 | .040 | 1/8 | .1200 | 1-1/2 | 2 | |
| N59606 | ME230-0.041-F3-S.0-Z2 | .041 | 1/8 | .1230 | 1-1/2 | 2 | |
| N59607 | ME230-0.042-F3-S.0-Z2 | .042 | 1/8 | .1260 | 1-1/2 | 2 | |
| N59608 | ME230-0.043-F3-S.0-Z2 | .043 | 1/8 | .1290 | 1-1/2 | 2 | |
| N59609 | ME230-0.044-F3-S.0-Z2 | .044 | 1/8 | .1320 | 1-1/2 | 2 | |
| N59610 | ME230-0.045-F3-S.0-Z2 | .045 | 1/8 | .1350 | 1-1/2 | 2 | |
| N59611 | ME230-0.046-F3-S.0-Z2 | .046 | 1/8 | .1380 | 1-1/2 | 2 | |
| N59612 | ME230-0.047-F3-S.0-Z2 | .047 | 1/8 | .1410 | 1-1/2 | 2 | |
| N59613 | ME230-0.048-F3-S.0-Z2 | .048 | 1/8 | .1440 | 1-1/2 | 2 | |
| N59614 | ME230-0.049-F3-S.0-Z2 | .049 | 1/8 | .1470 | 1-1/2 | 2 | |
| N59615 | ME230-0.050-F3-S.0-Z2 | .050 | 1/8 | .1500 | 1-1/2 | 2 | |
| N59616 | ME230-0.051-F3-S.0-Z2 | .051 | 1/8 | .1530 | 1-1/2 | 2 | |
| N59617 | ME230-0.052-F3-S.0-Z2 | .052 | 1/8 | .1560 | 1-1/2 | 2 | |
| N59618 | ME230-0.053-F3-S.0-Z2 | .053 | 1/8 | .1590 | 1-1/2 | 2 | |
| N59619 | ME230-0.054-F3-S.0-Z2 | .054 | 1/8 | .1620 | 1-1/2 | 2 | |
| N59620 | ME230-0.055-F3-S.0-Z2 | .055 | 1/8 | .1650 | 1-1/2 | 2 | |
| N59621 | ME230-0.060-F3-S.0-Z2 | .060 | 1/8 | .1800 | 1-1/2 | 2 | |
| N59622 | ME230-0.065-F3-S.0-Z2 | .065 | 1/8 | .1950 | 1-1/2 | 2 | |
| N59623 | ME230-0.070-F3-S.0-Z2 | .070 | 1/8 | .2100 | 1-1/2 | 2 | |
| N59624 | ME230-0.075-F3-S.0-Z2 | .075 | 1/8 | .2250 | 1-1/2 | 2 | |
| N59625 | ME230-0.080-F3-S.0-Z2 | .080 | 1/8 | .2400 | 1-1/2 | 2 | |
| N59626 | ME230-0.085-F3-S.0-Z2 | .085 | 1/8 | .2550 | 1-1/2 | 2 | |
| N59627 | ME230-0.090-F3-S.0-Z2 | .090 | 1/8 | .2700 | 1-1/2 | 2 | |
| N59628 | ME230-0.095-F3-S.0-Z2 | .095 | 1/8 | .2850 | 1-1/2 | 2 | |
| N59629 | ME230-0.100-F3-S.0-Z2 | .100 | 1/8 | .3000 | 1-1/2 | 2 | |
| N59630 | ME230-0.105-F3-S.0-Z2 | .105 | 1/8 | .3150 | 1-1/2 | 2 | |
| N59631 | ME230-0.110-F3-S.0-Z2 | .110 | 1/8 | .3300 | 1-1/2 | 2 | |
| N59632 | ME230-0.115-F3-S.0-Z2 | .115 | 1/8 | .3450 | 1-1/2 | 2 | |
| N59633 | ME230-0.120-F3-S.0-Z2 | .120 | 1/8 | .3600 | 1-1/2 | 2 | |

DISCOUNT CODE D42

# MICRO END MILLS- MEB230

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- Sub micron grain carbide
- .010" - .055" in .001" increments
- .060" - .120" in .005" increments

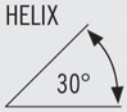
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59634 | MEB230-0.010-F3-B.0-Z2 | .010 | 1/8 | .0300 | 1-1/2 | 2 | |
| N59635 | MEB230-0.011-F3-B.0-Z2 | .011 | 1/8 | .0330 | 1-1/2 | 2 | |
| N59636 | MEB230-0.012-F3-B.0-Z2 | .012 | 1/8 | .0360 | 1-1/2 | 2 | |
| N59637 | MEB230-0.013-F3-B.0-Z2 | .013 | 1/8 | .0390 | 1-1/2 | 2 | |
| N59638 | MEB230-0.014-F3-B.0-Z2 | .014 | 1/8 | .0420 | 1-1/2 | 2 | |
| N59639 | MEB230-0.015-F3-B.0-Z2 | .015 | 1/8 | .0450 | 1-1/2 | 2 | |
| N59640 | MEB230-0.016-F3-B.0-Z2 | .016 | 1/8 | .0480 | 1-1/2 | 2 | |
| N59641 | MEB230-0.017-F3-B.0-Z2 | .017 | 1/8 | .0510 | 1-1/2 | 2 | |
| N59642 | MEB230-0.018-F3-B.0-Z2 | .018 | 1/8 | .0540 | 1-1/2 | 2 | |
| N59643 | MEB230-0.019-F3-B.0-Z2 | .019 | 1/8 | .0570 | 1-1/2 | 2 | |
| N59644 | MEB230-0.020-F3-B.0-Z2 | .020 | 1/8 | .0600 | 1-1/2 | 2 | |
| N59645 | MEB230-0.021-F3-B.0-Z2 | .021 | 1/8 | .0630 | 1-1/2 | 2 | |
| N59646 | MEB230-0.022-F3-B.0-Z2 | .022 | 1/8 | .0660 | 1-1/2 | 2 | |
| N59647 | MEB230-0.023-F3-B.0-Z2 | .023 | 1/8 | .0690 | 1-1/2 | 2 | |
| N59648 | MEB230-0.024-F3-B.0-Z2 | .024 | 1/8 | .0720 | 1-1/2 | 2 | |
| N59649 | MEB230-0.025-F3-B.0-Z2 | .025 | 1/8 | .0750 | 1-1/2 | 2 | |
| N59650 | MEB230-0.026-F3-B.0-Z2 | .026 | 1/8 | .0780 | 1-1/2 | 2 | |
| N59651 | MEB230-0.027-F3-B.0-Z2 | .027 | 1/8 | .0810 | 1-1/2 | 2 | |
| N59652 | MEB230-0.028-F3-B.0-Z2 | .028 | 1/8 | .0840 | 1-1/2 | 2 | |
| N59653 | MEB230-0.029-F3-B.0-Z2 | .029 | 1/8 | .0870 | 1-1/2 | 2 | |
| N59654 | MEB230-0.030-F3-B.0-Z2 | .030 | 1/8 | .0900 | 1-1/2 | 2 | |
| N59655 | MEB230-0.031-F3-B.0-Z2 | .031 | 1/8 | .0930 | 1-1/2 | 2 | |
| N59656 | MEB230-0.032-F3-B.0-Z2 | .032 | 1/8 | .0960 | 1-1/2 | 2 | |
| N59657 | MEB230-0.033-F3-B.0-Z2 | .033 | 1/8 | .0990 | 1-1/2 | 2 | |
| N59658 | MEB230-0.034-F3-B.0-Z2 | .034 | 1/8 | .1020 | 1-1/2 | 2 | |
| N59659 | MEB230-0.035-F3-B.0-Z2 | .035 | 1/8 | .1050 | 1-1/2 | 2 | |
| N59660 | MEB230-0.036-F3-B.0-Z2 | .036 | 1/8 | .1080 | 1-1/2 | 2 | |
| N59661 | MEB230-0.037-F3-B.0-Z2 | .037 | 1/8 | .1110 | 1-1/2 | 2 | |
| N59662 | MEB230-0.038-F3-B.0-Z2 | .038 | 1/8 | .1140 | 1-1/2 | 2 | |
| N59663 | MEB230-0.039-F3-B.0-Z2 | .039 | 1/8 | .1170 | 1-1/2 | 2 | |
| N59664 | MEB230-0.040-F3-B.0-Z2 | .040 | 1/8 | .1200 | 1-1/2 | 2 | |
| N59665 | MEB230-0.041-F3-B.0-Z2 | .041 | 1/8 | .1230 | 1-1/2 | 2 | |
| N59666 | MEB230-0.042-F3-B.0-Z2 | .042 | 1/8 | .1260 | 1-1/2 | 2 | |
| N59667 | MEB230-0.043-F3-B.0-Z2 | .043 | 1/8 | .1290 | 1-1/2 | 2 | |
| N59668 | MEB230-0.044-F3-B.0-Z2 | .044 | 1/8 | .1320 | 1-1/2 | 2 | |

DISCOUNT CODE D42

# MICRO END MILLS- MEB230

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- Sub micron grain carbide
- .010" - .055" in .001" increments
- .060" - .120" in .005" increments

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59669 | MEB230-0.045-F3-B.0-Z2 | .045 | 1/8 | .1350 | 1-1/2 | 2 | |
| N59670 | MEB230-0.046-F3-B.0-Z2 | .046 | 1/8 | .1380 | 1-1/2 | 2 | |
| N59671 | MEB230-0.047-F3-B.0-Z2 | .047 | 1/8 | .1410 | 1-1/2 | 2 | |
| N59672 | MEB230-0.048-F3-B.0-Z2 | .048 | 1/8 | .1440 | 1-1/2 | 2 | |
| N59673 | MEB230-0.049-F3-B.0-Z2 | .049 | 1/8 | .1470 | 1-1/2 | 2 | |
| N59674 | MEB230-0.050-F3-B.0-Z2 | .050 | 1/8 | .1500 | 1-1/2 | 2 | |
| N59675 | MEB230-0.051-F3-B.0-Z2 | .051 | 1/8 | .1530 | 1-1/2 | 2 | |
| N59676 | MEB230-0.052-F3-B.0-Z2 | .052 | 1/8 | .1560 | 1-1/2 | 2 | |
| N59677 | MEB230-0.053-F3-B.0-Z2 | .053 | 1/8 | .1590 | 1-1/2 | 2 | |
| N59678 | MEB230-0.054-F3-B.0-Z2 | .054 | 1/8 | .1620 | 1-1/2 | 2 | |
| N59679 | MEB230-0.055-F3-B.0-Z2 | .055 | 1/8 | .1650 | 1-1/2 | 2 | |
| N59680 | MEB230-0.060-F3-B.0-Z2 | .060 | 1/8 | .1800 | 1-1/2 | 2 | |
| N59681 | MEB230-0.065-F3-B.0-Z2 | .065 | 1/8 | .1950 | 1-1/2 | 2 | |
| N59682 | MEB230-0.070-F3-B.0-Z2 | .070 | 1/8 | .2100 | 1-1/2 | 2 | |
| N59683 | MEB230-0.075-F3-B.0-Z2 | .075 | 1/8 | .2250 | 1-1/2 | 2 | |
| N59684 | MEB230-0.080-F3-B.0-Z2 | .080 | 1/8 | .2400 | 1-1/2 | 2 | |
| N59685 | MEB230-0.085-F3-B.0-Z2 | .085 | 1/8 | .2550 | 1-1/2 | 2 | |
| N59686 | MEB230-0.090-F3-B.0-Z2 | .090 | 1/8 | .2700 | 1-1/2 | 2 | |
| N59687 | MEB230-0.095-F3-B.0-Z2 | .095 | 1/8 | .2850 | 1-1/2 | 2 | |
| N59688 | MEB230-0.100-F3-B.0-Z2 | .100 | 1/8 | .3000 | 1-1/2 | 2 | |
| N59689 | MEB230-0.105-F3-B.0-Z2 | .105 | 1/8 | .3150 | 1-1/2 | 2 | |
| N59690 | MEB230-0.110-F3-B.0-Z2 | .110 | 1/8 | .3300 | 1-1/2 | 2 | |
| N59691 | MEB230-0.115-F3-B.0-Z2 | .115 | 1/8 | .3450 | 1-1/2 | 2 | |
| N59692 | MEB230-0.120-F3-B.0-Z2 | .120 | 1/8 | .3600 | 1-1/2 | 2 | |

# MICRO END MILLS- MES230

SOLID CARBIDE

HELIX 30°

SQUARE END

CENTER CUTTING

- Sub micron grain carbide
- .005" - .055" in .001" increments

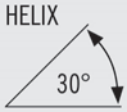
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59693 | MES230-0.005-F2-S.0-Z2 | .005 | 1/8 | .0075 | 1-1/2 | 2 | |
| N59694 | MES230-0.006-F2-S.0-Z2 | .006 | 1/8 | .0090 | 1-1/2 | 2 | |
| N59695 | MES230-0.007-F2-S.0-Z2 | .007 | 1/8 | .0105 | 1-1/2 | 2 | |
| N59696 | MES230-0.008-F2-S.0-Z2 | .008 | 1/8 | .0120 | 1-1/2 | 2 | |
| N59697 | MES230-0.009-F2-S.0-Z2 | .009 | 1/8 | .0135 | 1-1/2 | 2 | |
| N59698 | MES230-0.010-F2-S.0-Z2 | .010 | 1/8 | .0150 | 1-1/2 | 2 | |
| N59699 | MES230-0.011-F2-S.0-Z2 | .011 | 1/8 | .0165 | 1-1/2 | 2 | |
| N59700 | MES230-0.012-F2-S.0-Z2 | .012 | 1/8 | .0180 | 1-1/2 | 2 | |
| N59701 | MES230-0.013-F2-S.0-Z2 | .013 | 1/8 | .0195 | 1-1/2 | 2 | |
| N59702 | MES230-0.014-F2-S.0-Z2 | .014 | 1/8 | .0210 | 1-1/2 | 2 | |
| N59703 | MES230-0.015-F2-S.0-Z2 | .015 | 1/8 | .0225 | 1-1/2 | 2 | |
| N59704 | MES230-0.016-F2-S.0-Z2 | .016 | 1/8 | .0240 | 1-1/2 | 2 | |
| N59705 | MES230-0.017-F2-S.0-Z2 | .017 | 1/8 | .0255 | 1-1/2 | 2 | |
| N59706 | MES230-0.018-F2-S.0-Z2 | .018 | 1/8 | .0270 | 1-1/2 | 2 | |
| N59707 | MES230-0.019-F2-S.0-Z2 | .019 | 1/8 | .0285 | 1-1/2 | 2 | |
| N59708 | MES230-0.020-F2-S.0-Z2 | .020 | 1/8 | .0300 | 1-1/2 | 2 | |
| N59709 | MES230-0.021-F2-S.0-Z2 | .021 | 1/8 | .0315 | 1-1/2 | 2 | |
| N59710 | MES230-0.022-F2-S.0-Z2 | .022 | 1/8 | .0330 | 1-1/2 | 2 | |
| N59711 | MES230-0.023-F2-S.0-Z2 | .023 | 1/8 | .0345 | 1-1/2 | 2 | |
| N59712 | MES230-0.024-F2-S.0-Z2 | .024 | 1/8 | .0360 | 1-1/2 | 2 | |
| N59713 | MES230-0.025-F2-S.0-Z2 | .025 | 1/8 | .0375 | 1-1/2 | 2 | |
| N59714 | MES230-0.026-F2-S.0-Z2 | .026 | 1/8 | .0390 | 1-1/2 | 2 | |
| N59715 | MES230-0.027-F2-S.0-Z2 | .027 | 1/8 | .0405 | 1-1/2 | 2 | |
| N59716 | MES230-0.028-F2-S.0-Z2 | .028 | 1/8 | .0420 | 1-1/2 | 2 | |
| N59717 | MES230-0.029-F2-S.0-Z2 | .029 | 1/8 | .0435 | 1-1/2 | 2 | |
| N59718 | MES230-0.030-F2-S.0-Z2 | .030 | 1/8 | .0450 | 1-1/2 | 2 | |
| N59719 | MES230-0.031-F2-S.0-Z2 | .031 | 1/8 | .0465 | 1-1/2 | 2 | |
| N59720 | MES230-0.032-F2-S.0-Z2 | .032 | 1/8 | .0480 | 1-1/2 | 2 | |
| N59721 | MES230-0.033-F2-S.0-Z2 | .033 | 1/8 | .0495 | 1-1/2 | 2 | |
| N59722 | MES230-0.034-F2-S.0-Z2 | .034 | 1/8 | .0510 | 1-1/2 | 2 | |
| N59723 | MES230-0.035-F2-S.0-Z2 | .035 | 1/8 | .0525 | 1-1/2 | 2 | |
| N59724 | MES230-0.036-F2-S.0-Z2 | .036 | 1/8 | .0540 | 1-1/2 | 2 | |
| N59725 | MES230-0.037-F2-S.0-Z2 | .037 | 1/8 | .0555 | 1-1/2 | 2 | |
| N59726 | MES230-0.038-F2-S.0-Z2 | .038 | 1/8 | .0570 | 1-1/2 | 2 | |
| N59727 | MES230-0.039-F2-S.0-Z2 | .039 | 1/8 | .0585 | 1-1/2 | 2 | |

DISCOUNT CODE D42

# MICRO END MILLS- MES230

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

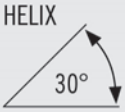
- Sub micron grain carbide
- .005" - .055" in .001" increments

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59728 | MES230-0.040-F2-S.0-Z2 | .040 | 1/8 | .0600 | 1-1/2 | 2 | |
| N59729 | MES230-0.041-F2-S.0-Z2 | .041 | 1/8 | .0615 | 1-1/2 | 2 | |
| N59730 | MES230-0.042-F2-S.0-Z2 | .042 | 1/8 | .0630 | 1-1/2 | 2 | |
| N59731 | MES230-0.043-F2-S.0-Z2 | .043 | 1/8 | .0645 | 1-1/2 | 2 | |
| N59732 | MES230-0.044-F2-S.0-Z2 | .044 | 1/8 | .0660 | 1-1/2 | 2 | |
| N59733 | MES230-0.045-F2-S.0-Z2 | .045 | 1/8 | .0675 | 1-1/2 | 2 | |
| N59734 | MES230-0.046-F2-S.0-Z2 | .046 | 1/8 | .0690 | 1-1/2 | 2 | |
| N59735 | MES230-0.047-F2-S.0-Z2 | .047 | 1/8 | .0705 | 1-1/2 | 2 | |
| N59736 | MES230-0.048-F2-S.0-Z2 | .048 | 1/8 | .0720 | 1-1/2 | 2 | |
| N59737 | MES230-0.049-F2-S.0-Z2 | .049 | 1/8 | .0735 | 1-1/2 | 2 | |
| N59738 | MES230-0.050-F2-S.0-Z2 | .050 | 1/8 | .0750 | 1-1/2 | 2 | |
| N59739 | MES230-0.051-F2-S.0-Z2 | .051 | 1/8 | .0765 | 1-1/2 | 2 | |
| N59740 | MES230-0.052-F2-S.0-Z2 | .052 | 1/8 | .0780 | 1-1/2 | 2 | |
| N59741 | MES230-0.053-F2-S.0-Z2 | .053 | 1/8 | .0795 | 1-1/2 | 2 | |
| N59742 | MES230-0.054-F2-S.0-Z2 | .054 | 1/8 | .0810 | 1-1/2 | 2 | |
| N59743 | MES230-0.055-F2-S.0-Z2 | .055 | 1/8 | .0825 | 1-1/2 | 2 | |

# MICRO END MILLS- MESB230

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- Sub micron grain carbide
- .005" - .055" in .001" increments

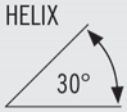
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59744 | MESB230-0.005-F2-B.0-Z2 | .005 | 1/8 | .0075 | 1-1/2 | 2 | |
| N59745 | MESB230-0.006-F2-B.0-Z2 | .006 | 1/8 | .0090 | 1-1/2 | 2 | |
| N59746 | MESB230-0.007-F2-B.0-Z2 | .007 | 1/8 | .0105 | 1-1/2 | 2 | |
| N59747 | MESB230-0.008-F2-B.0-Z2 | .008 | 1/8 | .0120 | 1-1/2 | 2 | |
| N59748 | MESB230-0.009-F2-B.0-Z2 | .009 | 1/8 | .0135 | 1-1/2 | 2 | |
| N59749 | MESB230-0.010-F2-B.0-Z2 | .010 | 1/8 | .0150 | 1-1/2 | 2 | |
| N59750 | MESB230-0.011-F2-B.0-Z2 | .011 | 1/8 | .0165 | 1-1/2 | 2 | |
| N59751 | MESB230-0.012-F2-B.0-Z2 | .012 | 1/8 | .0180 | 1-1/2 | 2 | |
| N59752 | MESB230-0.013-F2-B.0-Z2 | .013 | 1/8 | .0195 | 1-1/2 | 2 | |
| N59753 | MESB230-0.014-F2-B.0-Z2 | .014 | 1/8 | .0210 | 1-1/2 | 2 | |
| N59754 | MESB230-0.015-F2-B.0-Z2 | .015 | 1/8 | .0225 | 1-1/2 | 2 | |
| N59755 | MESB230-0.016-F2-B.0-Z2 | .016 | 1/8 | .0240 | 1-1/2 | 2 | |
| N59756 | MESB230-0.017-F2-B.0-Z2 | .017 | 1/8 | .0255 | 1-1/2 | 2 | |
| N59757 | MESB230-0.018-F2-B.0-Z2 | .018 | 1/8 | .0270 | 1-1/2 | 2 | |
| N59758 | MESB230-0.019-F2-B.0-Z2 | .019 | 1/8 | .0285 | 1-1/2 | 2 | |
| N59759 | MESB230-0.020-F2-B.0-Z2 | .020 | 1/8 | .0300 | 1-1/2 | 2 | |
| N59760 | MESB230-0.021-F2-B.0-Z2 | .021 | 1/8 | .0315 | 1-1/2 | 2 | |
| N59761 | MESB230-0.022-F2-B.0-Z2 | .022 | 1/8 | .0330 | 1-1/2 | 2 | |
| N59762 | MESB230-0.023-F2-B.0-Z2 | .023 | 1/8 | .0345 | 1-1/2 | 2 | |
| N59763 | MESB230-0.024-F2-B.0-Z2 | .024 | 1/8 | .0360 | 1-1/2 | 2 | |
| N59764 | MESB230-0.025-F2-B.0-Z2 | .025 | 1/8 | .0375 | 1-1/2 | 2 | |
| N59765 | MESB230-0.026-F2-B.0-Z2 | .026 | 1/8 | .0390 | 1-1/2 | 2 | |
| N59766 | MESB230-0.027-F2-B.0-Z2 | .027 | 1/8 | .0405 | 1-1/2 | 2 | |
| N59767 | MESB230-0.028-F2-B.0-Z2 | .028 | 1/8 | .0420 | 1-1/2 | 2 | |
| N59768 | MESB230-0.029-F2-B.0-Z2 | .029 | 1/8 | .0435 | 1-1/2 | 2 | |
| N59769 | MESB230-0.030-F2-B.0-Z2 | .030 | 1/8 | .0450 | 1-1/2 | 2 | |
| N59770 | MESB230-0.031-F2-B.0-Z2 | .031 | 1/8 | .0465 | 1-1/2 | 2 | |
| N59771 | MESB230-0.032-F2-B.0-Z2 | .032 | 1/8 | .0480 | 1-1/2 | 2 | |
| N59772 | MESB230-0.033-F2-B.0-Z2 | .033 | 1/8 | .0495 | 1-1/2 | 2 | |
| N59773 | MESB230-0.034-F2-B.0-Z2 | .034 | 1/8 | .0510 | 1-1/2 | 2 | |
| N59774 | MESB230-0.035-F2-B.0-Z2 | .035 | 1/8 | .0525 | 1-1/2 | 2 | |
| N59775 | MESB230-0.036-F2-B.0-Z2 | .036 | 1/8 | .0540 | 1-1/2 | 2 | |
| N59776 | MESB230-0.037-F2-B.0-Z2 | .037 | 1/8 | .0555 | 1-1/2 | 2 | |
| N59777 | MESB230-0.038-F2-B.0-Z2 | .038 | 1/8 | .0570 | 1-1/2 | 2 | |
| N59778 | MESB230-0.039-F2-B.0-Z2 | .039 | 1/8 | .0585 | 1-1/2 | 2 | |

DISCOUNT CODE D42

# MICRO END MILLS- MESB230

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

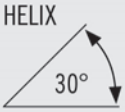
- Sub micron grain carbide
- .005" - .055" in .001" increments

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59779 | MESB230-0.040-F2-B.0-Z2 | .040 | 1/8 | .0600 | 1-1/2 | 2 | |
| N59780 | MESB230-0.041-F2-B.0-Z2 | .041 | 1/8 | .0615 | 1-1/2 | 2 | |
| N59781 | MESB230-0.042-F2-B.0-Z2 | .042 | 1/8 | .0630 | 1-1/2 | 2 | |
| N59782 | MESB230-0.043-F2-B.0-Z2 | .043 | 1/8 | .0645 | 1-1/2 | 2 | |
| N59783 | MESB230-0.044-F2-B.0-Z2 | .044 | 1/8 | .0660 | 1-1/2 | 2 | |
| N59784 | MESB230-0.045-F2-B.0-Z2 | .045 | 1/8 | .0675 | 1-1/2 | 2 | |
| N59785 | MESB230-0.046-F2-B.0-Z2 | .046 | 1/8 | .0690 | 1-1/2 | 2 | |
| N59786 | MESB230-0.047-F2-B.0-Z2 | .047 | 1/8 | .0705 | 1-1/2 | 2 | |
| N59787 | MESB230-0.048-F2-B.0-Z2 | .048 | 1/8 | .0720 | 1-1/2 | 2 | |
| N59788 | MESB230-0.049-F2-B.0-Z2 | .049 | 1/8 | .0735 | 1-1/2 | 2 | |
| N59789 | MESB230-0.050-F2-B.0-Z2 | .050 | 1/8 | .0750 | 1-1/2 | 2 | |
| N59790 | MESB230-0.051-F2-B.0-Z2 | .051 | 1/8 | .0765 | 1-1/2 | 2 | |
| N59791 | MESB230-0.052-F2-B.0-Z2 | .052 | 1/8 | .0780 | 1-1/2 | 2 | |
| N59792 | MESB230-0.053-F2-B.0-Z2 | .053 | 1/8 | .0795 | 1-1/2 | 2 | |
| N59793 | MESB230-0.054-F2-B.0-Z2 | .054 | 1/8 | .0810 | 1-1/2 | 2 | |
| N59794 | MESB230-0.055-F2-B.0-Z2 | .055 | 1/8 | .0825 | 1-1/2 | 2 | |

# MICRO END MILLS- ME430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- Sub micron grain carbide
- .005" - .055" in .001" increments
- .060" - .120" in .005" increments

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59795 | ME430-0.005-F3-S.0-Z4 | .005 | 1/8 | .0150 | 1-1/2 | 4 | |
| N59796 | ME430-0.006-F3-S.0-Z4 | .006 | 1/8 | .0180 | 1-1/2 | 4 | |
| N59797 | ME430-0.007-F3-S.0-Z4 | .007 | 1/8 | .0210 | 1-1/2 | 4 | |
| N59798 | ME430-0.008-F3-S.0-Z4 | .008 | 1/8 | .0240 | 1-1/2 | 4 | |
| N59799 | ME430-0.009-F3-S.0-Z4 | .009 | 1/8 | .0270 | 1-1/2 | 4 | |
| N59800 | ME430-0.010-F3-S.0-Z4 | .010 | 1/8 | .0300 | 1-1/2 | 4 | |
| N59801 | ME430-0.011-F3-S.0-Z4 | .011 | 1/8 | .0330 | 1-1/2 | 4 | |
| N59802 | ME430-0.012-F3-S.0-Z4 | .012 | 1/8 | .0360 | 1-1/2 | 4 | |
| N59803 | ME430-0.013-F3-S.0-Z4 | .013 | 1/8 | .0390 | 1-1/2 | 4 | |
| N59804 | ME430-0.014-F3-S.0-Z4 | .014 | 1/8 | .0420 | 1-1/2 | 4 | |
| N59805 | ME430-0.015-F3-S.0-Z4 | .015 | 1/8 | .0450 | 1-1/2 | 4 | |
| N59806 | ME430-0.016-F3-S.0-Z4 | .016 | 1/8 | .0480 | 1-1/2 | 4 | |
| N59807 | ME430-0.017-F3-S.0-Z4 | .017 | 1/8 | .0510 | 1-1/2 | 4 | |
| N59808 | ME430-0.018-F3-S.0-Z4 | .018 | 1/8 | .0540 | 1-1/2 | 4 | |
| N59809 | ME430-0.019-F3-S.0-Z4 | .019 | 1/8 | .0570 | 1-1/2 | 4 | |
| N59810 | ME430-0.020-F3-S.0-Z4 | .020 | 1/8 | .0600 | 1-1/2 | 4 | |
| N59811 | ME430-0.021-F3-S.0-Z4 | .021 | 1/8 | .0630 | 1-1/2 | 4 | |
| N59812 | ME430-0.022-F3-S.0-Z4 | .022 | 1/8 | .0660 | 1-1/2 | 4 | |
| N59813 | ME430-0.023-F3-S.0-Z4 | .023 | 1/8 | .0690 | 1-1/2 | 4 | |
| N59814 | ME430-0.024-F3-S.0-Z4 | .024 | 1/8 | .0720 | 1-1/2 | 4 | |
| N59815 | ME430-0.025-F3-S.0-Z4 | .025 | 1/8 | .0750 | 1-1/2 | 4 | |
| N59816 | ME430-0.026-F3-S.0-Z4 | .026 | 1/8 | .0780 | 1-1/2 | 4 | |
| N59817 | ME430-0.027-F3-S.0-Z4 | .027 | 1/8 | .0810 | 1-1/2 | 4 | |
| N59818 | ME430-0.028-F3-S.0-Z4 | .028 | 1/8 | .0840 | 1-1/2 | 4 | |
| N59819 | ME430-0.029-F3-S.0-Z4 | .029 | 1/8 | .0870 | 1-1/2 | 4 | |
| N59820 | ME430-0.030-F3-S.0-Z4 | .030 | 1/8 | .0900 | 1-1/2 | 4 | |
| N59821 | ME430-0.031-F3-S.0-Z4 | .031 | 1/8 | .0930 | 1-1/2 | 4 | |
| N59822 | ME430-0.032-F3-S.0-Z4 | .032 | 1/8 | .0960 | 1-1/2 | 4 | |
| N59823 | ME430-0.033-F3-S.0-Z4 | .033 | 1/8 | .0990 | 1-1/2 | 4 | |
| N59824 | ME430-0.034-F3-S.0-Z4 | .034 | 1/8 | .1020 | 1-1/2 | 4 | |
| N59825 | ME430-0.035-F3-S.0-Z4 | .035 | 1/8 | .1050 | 1-1/2 | 4 | |
| N59826 | ME430-0.036-F3-S.0-Z4 | .036 | 1/8 | .1080 | 1-1/2 | 4 | |
| N59827 | ME430-0.037-F3-S.0-Z4 | .037 | 1/8 | .1110 | 1-1/2 | 4 | |
| N59828 | ME430-0.038-F3-S.0-Z4 | .038 | 1/8 | .1140 | 1-1/2 | 4 | |
| N59829 | ME430-0.039-F3-S.0-Z4 | .039 | 1/8 | .1170 | 1-1/2 | 4 | |

# MICRO END MILLS- ME430

SOLID CARBIDE

HELIX 30°

SQUARE END

CENTER CUTTING

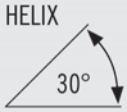
- Sub micron grain carbide
- .005" - .055" in .001" increments
- .060" - .120" in .005" increments

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59830 | ME430-0.040-F3-S.0-Z4 | .040 | 1/8 | .1200 | 1-1/2 | 4 | |
| N59831 | ME430-0.041-F3-S.0-Z4 | .041 | 1/8 | .1230 | 1-1/2 | 4 | |
| N59832 | ME430-0.042-F3-S.0-Z4 | .042 | 1/8 | .1260 | 1-1/2 | 4 | |
| N59833 | ME430-0.043-F3-S.0-Z4 | .043 | 1/8 | .1290 | 1-1/2 | 4 | |
| N59834 | ME430-0.044-F3-S.0-Z4 | .044 | 1/8 | .1320 | 1-1/2 | 4 | |
| N59835 | ME430-0.045-F3-S.0-Z4 | .045 | 1/8 | .1350 | 1-1/2 | 4 | |
| N59836 | ME430-0.046-F3-S.0-Z4 | .046 | 1/8 | .1380 | 1-1/2 | 4 | |
| N59837 | ME430-0.047-F3-S.0-Z4 | .047 | 1/8 | .1410 | 1-1/2 | 4 | |
| N59838 | ME430-0.048-F3-S.0-Z4 | .048 | 1/8 | .1440 | 1-1/2 | 4 | |
| N59839 | ME430-0.049-F3-S.0-Z4 | .049 | 1/8 | .1470 | 1-1/2 | 4 | |
| N59840 | ME430-0.050-F3-S.0-Z4 | .050 | 1/8 | .1500 | 1-1/2 | 4 | |
| N59841 | ME430-0.051-F3-S.0-Z4 | .051 | 1/8 | .1530 | 1-1/2 | 4 | |
| N59842 | ME430-0.052-F3-S.0-Z4 | .052 | 1/8 | .1560 | 1-1/2 | 4 | |
| N59843 | ME430-0.053-F3-S.0-Z4 | .053 | 1/8 | .1590 | 1-1/2 | 4 | |
| N59844 | ME430-0.054-F3-S.0-Z4 | .054 | 1/8 | .1620 | 1-1/2 | 4 | |
| N59845 | ME430-0.055-F3-S.0-Z4 | .055 | 1/8 | .1650 | 1-1/2 | 4 | |
| N59846 | ME430-0.060-F3-S.0-Z4 | .060 | 1/8 | .1800 | 1-1/2 | 4 | |
| N59847 | ME430-0.065-F3-S.0-Z4 | .065 | 1/8 | .1950 | 1-1/2 | 4 | |
| N59848 | ME430-0.070-F3-S.0-Z4 | .070 | 1/8 | .2100 | 1-1/2 | 4 | |
| N59849 | ME430-0.075-F3-S.0-Z4 | .075 | 1/8 | .2250 | 1-1/2 | 4 | |
| N59850 | ME430-0.080-F3-S.0-Z4 | .080 | 1/8 | .2400 | 1-1/2 | 4 | |
| N59851 | ME430-0.085-F3-S.0-Z4 | .085 | 1/8 | .2550 | 1-1/2 | 4 | |
| N59852 | ME430-0.090-F3-S.0-Z4 | .090 | 1/8 | .2700 | 1-1/2 | 4 | |
| N59853 | ME430-0.095-F3-S.0-Z4 | .095 | 1/8 | .2850 | 1-1/2 | 4 | |
| N59854 | ME430-0.100-F3-S.0-Z4 | .100 | 1/8 | .3000 | 1-1/2 | 4 | |
| N59855 | ME430-0.105-F3-S.0-Z4 | .105 | 1/8 | .3150 | 1-1/2 | 4 | |
| N59856 | ME430-0.110-F3-S.0-Z4 | .110 | 1/8 | .3300 | 1-1/2 | 4 | |
| N59857 | ME430-0.115-F3-S.0-Z4 | .115 | 1/8 | .3450 | 1-1/2 | 4 | |
| N59858 | ME430-0.120-F3-S.0-Z4 | .120 | 1/8 | .3600 | 1-1/2 | 4 | |

# MICRO END MILLS- MEB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- Sub micron grain carbide
- .015" - .055" in .001" increments
- .060" - .120" in .005" increments

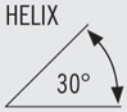
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59859 | MEB430-0.015-F3-B.0-Z4 | .015 | 1/8 | .0450 | 1-1/2 | 4 | |
| N59860 | MEB430-0.016-F3-B.0-Z4 | .016 | 1/8 | .0480 | 1-1/2 | 4 | |
| N59861 | MEB430-0.017-F3-B.0-Z4 | .017 | 1/8 | .0510 | 1-1/2 | 4 | |
| N59862 | MEB430-0.018-F3-B.0-Z4 | .018 | 1/8 | .0540 | 1-1/2 | 4 | |
| N59863 | MEB430-0.019-F3-B.0-Z4 | .019 | 1/8 | .0570 | 1-1/2 | 4 | |
| N59864 | MEB430-0.020-F3-B.0-Z4 | .020 | 1/8 | .0600 | 1-1/2 | 4 | |
| N59865 | MEB430-0.021-F3-B.0-Z4 | .021 | 1/8 | .0630 | 1-1/2 | 4 | |
| N59866 | MEB430-0.022-F3-B.0-Z4 | .022 | 1/8 | .0660 | 1-1/2 | 4 | |
| N59867 | MEB430-0.023-F3-B.0-Z4 | .023 | 1/8 | .0690 | 1-1/2 | 4 | |
| N59868 | MEB430-0.024-F3-B.0-Z4 | .024 | 1/8 | .0720 | 1-1/2 | 4 | |
| N59869 | MEB430-0.025-F3-B.0-Z4 | .025 | 1/8 | .0750 | 1-1/2 | 4 | |
| N59870 | MEB430-0.026-F3-B.0-Z4 | .026 | 1/8 | .0780 | 1-1/2 | 4 | |
| N59871 | MEB430-0.027-F3-B.0-Z4 | .027 | 1/8 | .0810 | 1-1/2 | 4 | |
| N59872 | MEB430-0.028-F3-B.0-Z4 | .028 | 1/8 | .0840 | 1-1/2 | 4 | |
| N59873 | MEB430-0.029-F3-B.0-Z4 | .029 | 1/8 | .0870 | 1-1/2 | 4 | |
| N59874 | MEB430-0.030-F3-B.0-Z4 | .030 | 1/8 | .0900 | 1-1/2 | 4 | |
| N59875 | MEB430-0.031-F3-B.0-Z4 | .031 | 1/8 | .0930 | 1-1/2 | 4 | |
| N59876 | MEB430-0.032-F3-B.0-Z4 | .032 | 1/8 | .0960 | 1-1/2 | 4 | |
| N59877 | MEB430-0.033-F3-B.0-Z4 | .033 | 1/8 | .0990 | 1-1/2 | 4 | |
| N59878 | MEB430-0.034-F3-B.0-Z4 | .034 | 1/8 | .1020 | 1-1/2 | 4 | |
| N59879 | MEB430-0.035-F3-B.0-Z4 | .035 | 1/8 | .1050 | 1-1/2 | 4 | |
| N59880 | MEB430-0.036-F3-B.0-Z4 | .036 | 1/8 | .1080 | 1-1/2 | 4 | |
| N59881 | MEB430-0.037-F3-B.0-Z4 | .037 | 1/8 | .1110 | 1-1/2 | 4 | |
| N59882 | MEB430-0.038-F3-B.0-Z4 | .038 | 1/8 | .1140 | 1-1/2 | 4 | |
| N59883 | MEB430-0.039-F3-B.0-Z4 | .039 | 1/8 | .1170 | 1-1/2 | 4 | |
| N59884 | MEB430-0.040-F3-B.0-Z4 | .040 | 1/8 | .1200 | 1-1/2 | 4 | |
| N59885 | MEB430-0.041-F3-B.0-Z4 | .041 | 1/8 | .1230 | 1-1/2 | 4 | |
| N59886 | MEB430-0.042-F3-B.0-Z4 | .042 | 1/8 | .1260 | 1-1/2 | 4 | |
| N59887 | MEB430-0.043-F3-B.0-Z4 | .043 | 1/8 | .1290 | 1-1/2 | 4 | |
| N59888 | MEB430-0.044-F3-B.0-Z4 | .044 | 1/8 | .1320 | 1-1/2 | 4 | |
| N59889 | MEB430-0.045-F3-B.0-Z4 | .045 | 1/8 | .1350 | 1-1/2 | 4 | |
| N59890 | MEB430-0.046-F3-B.0-Z4 | .046 | 1/8 | .1380 | 1-1/2 | 4 | |
| N59891 | MEB430-0.047-F3-B.0-Z4 | .047 | 1/8 | .1410 | 1-1/2 | 4 | |
| N59892 | MEB430-0.048-F3-B.0-Z4 | .048 | 1/8 | .1440 | 1-1/2 | 4 | |
| N59893 | MEB430-0.049-F3-B.0-Z4 | .049 | 1/8 | .1470 | 1-1/2 | 4 | |

DISCOUNT CODE D42

# MICRO END MILLS- MEB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- Sub micron grain carbide
- .015" - .055" in .001" increments
- .060" - .120" in .005" increments

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59894 | MEB430-0.050-F3-B.0-Z4 | .050 | 1/8 | .1500 | 1-1/2 | 4 | |
| N59895 | MEB430-0.051-F3-B.0-Z4 | .051 | 1/8 | .1530 | 1-1/2 | 4 | |
| N59896 | MEB430-0.052-F3-B.0-Z4 | .052 | 1/8 | .1560 | 1-1/2 | 4 | |
| N59897 | MEB430-0.053-F3-B.0-Z4 | .053 | 1/8 | .1590 | 1-1/2 | 4 | |
| N59898 | MEB430-0.054-F3-B.0-Z4 | .054 | 1/8 | .1620 | 1-1/2 | 4 | |
| N59899 | MEB430-0.055-F3-B.0-Z4 | .055 | 1/8 | .1650 | 1-1/2 | 4 | |
| N59900 | MEB430-0.060-F3-B.0-Z4 | .060 | 1/8 | .1800 | 1-1/2 | 4 | |
| N59901 | MEB430-0.065-F3-B.0-Z4 | .065 | 1/8 | .1950 | 1-1/2 | 4 | |
| N59902 | MEB430-0.070-F3-B.0-Z4 | .070 | 1/8 | .2100 | 1-1/2 | 4 | |
| N59903 | MEB430-0.075-F3-B.0-Z4 | .075 | 1/8 | .2250 | 1-1/2 | 4 | |
| N59904 | MEB430-0.080-F3-B.0-Z4 | .080 | 1/8 | .2400 | 1-1/2 | 4 | |
| N59905 | MEB430-0.085-F3-B.0-Z4 | .085 | 1/8 | .2550 | 1-1/2 | 4 | |
| N59906 | MEB430-0.090-F3-B.0-Z4 | .090 | 1/8 | .2700 | 1-1/2 | 4 | |
| N59907 | MEB430-0.095-F3-B.0-Z4 | .095 | 1/8 | .2850 | 1-1/2 | 4 | |
| N59908 | MEB430-0.100-F3-B.0-Z4 | .100 | 1/8 | .3000 | 1-1/2 | 4 | |
| N59909 | MEB430-0.105-F3-B.0-Z4 | .105 | 1/8 | .3150 | 1-1/2 | 4 | |
| N59910 | MEB430-0.110-F3-B.0-Z4 | .110 | 1/8 | .3300 | 1-1/2 | 4 | |
| N59911 | MEB430-0.115-F3-B.0-Z4 | .115 | 1/8 | .3450 | 1-1/2 | 4 | |
| N59912 | MEB430-0.120-F3-B.0-Z4 | .120 | 1/8 | .3600 | 1-1/2 | 4 | |

# MICRO END MILLS- MES430

SOLID CARBIDE

HELIX 30°

SQUARE END

CENTER CUTTING

- Sub micron grain carbide
- .005" - .055" in .001" increments

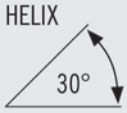
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59913 | MES430-0.005-F2-S.0-Z4 | .005 | 1/8 | .0075 | 1-1/2 | 4 | |
| N59914 | MES430-0.006-F2-S.0-Z4 | .006 | 1/8 | .0090 | 1-1/2 | 4 | |
| N59915 | MES430-0.007-F2-S.0-Z4 | .007 | 1/8 | .0105 | 1-1/2 | 4 | |
| N59916 | MES430-0.008-F2-S.0-Z4 | .008 | 1/8 | .0120 | 1-1/2 | 4 | |
| N59917 | MES430-0.009-F2-S.0-Z4 | .009 | 1/8 | .0135 | 1-1/2 | 4 | |
| N59918 | MES430-0.010-F2-S.0-Z4 | .010 | 1/8 | .0150 | 1-1/2 | 4 | |
| N59919 | MES430-0.011-F2-S.0-Z4 | .011 | 1/8 | .0165 | 1-1/2 | 4 | |
| N59920 | MES430-0.012-F2-S.0-Z4 | .012 | 1/8 | .0180 | 1-1/2 | 4 | |
| N59921 | MES430-0.013-F2-S.0-Z4 | .013 | 1/8 | .0195 | 1-1/2 | 4 | |
| N59922 | MES430-0.014-F2-S.0-Z4 | .014 | 1/8 | .0210 | 1-1/2 | 4 | |
| N59923 | MES430-0.015-F2-S.0-Z4 | .015 | 1/8 | .0225 | 1-1/2 | 4 | |
| N59924 | MES430-0.016-F2-S.0-Z4 | .016 | 1/8 | .0240 | 1-1/2 | 4 | |
| N59925 | MES430-0.017-F2-S.0-Z4 | .017 | 1/8 | .0255 | 1-1/2 | 4 | |
| N59926 | MES430-0.018-F2-S.0-Z4 | .018 | 1/8 | .0270 | 1-1/2 | 4 | |
| N59927 | MES430-0.019-F2-S.0-Z4 | .019 | 1/8 | .0285 | 1-1/2 | 4 | |
| N59928 | MES430-0.020-F2-S.0-Z4 | .020 | 1/8 | .0300 | 1-1/2 | 4 | |
| N59929 | MES430-0.021-F2-S.0-Z4 | .021 | 1/8 | .0315 | 1-1/2 | 4 | |
| N59930 | MES430-0.022-F2-S.0-Z4 | .022 | 1/8 | .0330 | 1-1/2 | 4 | |
| N59931 | MES430-0.023-F2-S.0-Z4 | .023 | 1/8 | .0345 | 1-1/2 | 4 | |
| N59932 | MES430-0.024-F2-S.0-Z4 | .024 | 1/8 | .0360 | 1-1/2 | 4 | |
| N59933 | MES430-0.025-F2-S.0-Z4 | .025 | 1/8 | .0375 | 1-1/2 | 4 | |
| N59934 | MES430-0.026-F2-S.0-Z4 | .026 | 1/8 | .0390 | 1-1/2 | 4 | |
| N59935 | MES430-0.027-F2-S.0-Z4 | .027 | 1/8 | .0405 | 1-1/2 | 4 | |
| N59936 | MES430-0.028-F2-S.0-Z4 | .028 | 1/8 | .0420 | 1-1/2 | 4 | |
| N59937 | MES430-0.029-F2-S.0-Z4 | .029 | 1/8 | .0435 | 1-1/2 | 4 | |
| N59938 | MES430-0.030-F2-S.0-Z4 | .030 | 1/8 | .0450 | 1-1/2 | 4 | |
| N59939 | MES430-0.031-F2-S.0-Z4 | .031 | 1/8 | .0465 | 1-1/2 | 4 | |
| N59940 | MES430-0.032-F2-S.0-Z4 | .032 | 1/8 | .0480 | 1-1/2 | 4 | |
| N59941 | MES430-0.033-F2-S.0-Z4 | .033 | 1/8 | .0495 | 1-1/2 | 4 | |
| N59942 | MES430-0.034-F2-S.0-Z4 | .034 | 1/8 | .0510 | 1-1/2 | 4 | |
| N59943 | MES430-0.035-F2-S.0-Z4 | .035 | 1/8 | .0525 | 1-1/2 | 4 | |
| N59944 | MES430-0.036-F2-S.0-Z4 | .036 | 1/8 | .0540 | 1-1/2 | 4 | |
| N59945 | MES430-0.037-F2-S.0-Z4 | .037 | 1/8 | .0555 | 1-1/2 | 4 | |
| N59946 | MES430-0.038-F2-S.0-Z4 | .038 | 1/8 | .0570 | 1-1/2 | 4 | |
| N59947 | MES430-0.039-F2-S.0-Z4 | .039 | 1/8 | .0585 | 1-1/2 | 4 | |

DISCOUNT CODE D42

# MICRO END MILLS- MES430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- Sub micron grain carbide
- .005" - .055" in .001" increments

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N59948 | MES430-0.040-F2-S.0-Z4 | .040 | 1/8 | .0600 | 1-1/2 | 4 | |
| N59949 | MES430-0.041-F2-S.0-Z4 | .041 | 1/8 | .0615 | 1-1/2 | 4 | |
| N59950 | MES430-0.042-F2-S.0-Z4 | .042 | 1/8 | .0630 | 1-1/2 | 4 | |
| N59951 | MES430-0.043-F2-S.0-Z4 | .043 | 1/8 | .0645 | 1-1/2 | 4 | |
| N59952 | MES430-0.044-F2-S.0-Z4 | .044 | 1/8 | .0660 | 1-1/2 | 4 | |
| N59953 | MES430-0.045-F2-S.0-Z4 | .045 | 1/8 | .0675 | 1-1/2 | 4 | |
| N59954 | MES430-0.046-F2-S.0-Z4 | .046 | 1/8 | .0690 | 1-1/2 | 4 | |
| N59955 | MES430-0.047-F2-S.0-Z4 | .047 | 1/8 | .0705 | 1-1/2 | 4 | |
| N59956 | MES430-0.048-F2-S.0-Z4 | .048 | 1/8 | .0720 | 1-1/2 | 4 | |
| N59957 | MES430-0.049-F2-S.0-Z4 | .049 | 1/8 | .0735 | 1-1/2 | 4 | |
| N59958 | MES430-0.050-F2-S.0-Z4 | .050 | 1/8 | .0750 | 1-1/2 | 4 | |
| N59959 | MES430-0.051-F2-S.0-Z4 | .051 | 1/8 | .0765 | 1-1/2 | 4 | |
| N59960 | MES430-0.052-F2-S.0-Z4 | .052 | 1/8 | .0780 | 1-1/2 | 4 | |
| N59961 | MES430-0.053-F2-S.0-Z4 | .053 | 1/8 | .0795 | 1-1/2 | 4 | |
| N59962 | MES430-0.054-F2-S.0-Z4 | .054 | 1/8 | .0810 | 1-1/2 | 4 | |
| N59963 | MES430-0.055-F2-S.0-Z4 | .055 | 1/8 | .0825 | 1-1/2 | 4 | |

# SOLID CARBIDE END MILLS

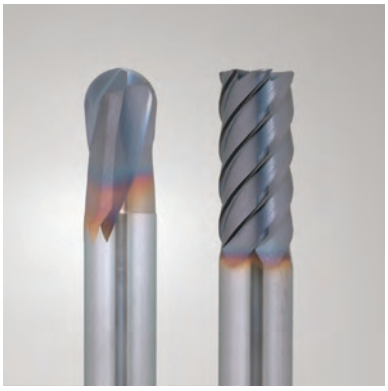
## CVD DIAMOND

Diamond is the material of choice for machining abrasive non-ferrous metals, ceramics, and composites. The unique hardness of the Diamond coating makes it more resistant to abrasive wear than any other cutting tool material. In addition, high chemical stability and the resulting low affinity to non-ferrous materials as well as the low coefficient of friction helps retard the formation of built-up edges.

CVD Diamond coating offers a new level of wear protection and performance. DiamondPlus™ coating combines micro and nano-crystalline diamond coatings into one super hard layer.

## CHAMFER MILLS

Chamfer mills are available to produce either a 60° or 90° chamfer. Both styles are available with two or four flutes.



## MOLD & DIE

The mold & die range offers geometries for hard milling of steels up to 62Rc. Two geometries are available for rough and finish milling of contours and complex shapes.

The new MZ is designed specifically for high feed milling hard materials.

## THREAD MILLS

Thread milling is a versatile and cost effective solution, especially if you are machining a variety of parts and materials on the same machine. Niagara Cutter offers a broad range of solid carbide thread mills to meet your requirements.

One thread mill can produce, regardless of diameter, thread forms of the same pitch. Thread forms produced can be internal or external, right-hand or left-hand. Plus, milled threads produce excellent form, finish, and dimensional accuracy, even in difficult to machine materials.

# DIAMONDPLUS™ COATED- DIA230

SOLID CARBIDE

HELIX 30°

SQUARE END

CENTER CUTTING

- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N77898 | DIA230-0.016-F3-S.0-Z2 | 1/64 | 1/8 | 3/64 | 1-1/2 | 2 | CVDDIA |
| N77901 | DIA230-0.031-F3-S.0-Z2 | 1/32 | 1/8 | 3/32 | 1-1/2 | 2 | CVDDIA |
| N77904 | DIA230-0.063-F3-S.0-Z2 | 1/16 | 1/8 | 3/16 | 1-1/2 | 2 | CVDDIA |
| N77910 | DIA230-0.125-D4-S.0-Z2 | 1/8 | 1/8 | 1/2 | 1-1/2 | 2 | CVDDIA |
| N77913 | DIA230-0.188-D3-S.0-Z2 | 3/16 | 3/16 | 5/8 | 2 | 2 | CVDDIA |
| N77916 | DIA230-0.250-D3-S.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | CVDDIA |
| N77928 | DIA230-0.500-D2-S.0-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | CVDDIA |

# DIAMONDPLUS™ COATED- DIA230M

SOLID CARBIDE

HELIX 30°

SQUARE END

CENTER CUTTING

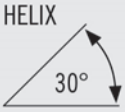
- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N77259 | DIA230M-010-F4-S.0-Z2 | 1mm | 3mm | 4mm | 45mm | 2 | CVDDIA |
| N77260 | DIA230M-020-F5-S.0-Z2 | 2mm | 3mm | 10mm | 45mm | 2 | CVDDIA |
| N77261 | DIA230M-030-D5-S.0-Z2 | 3mm | 3mm | 15mm | 45mm | 2 | CVDDIA |
| N77263 | DIA230M-060-D3-S.0-Z2 | 6mm | 6mm | 20mm | 64mm | 2 | CVDDIA |
| N77264 | DIA230M-080-D2-S.0-Z2 | 8mm | 8mm | 20mm | 64mm | 2 | CVDDIA |
| N77265 | DIA230M-100-D2-S.0-Z2 | 10mm | 10mm | 25mm | 63mm | 2 | CVDDIA |
| N77266 | DIA230M-120-D2-S.0-Z2 | 12mm | 12mm | 30mm | 76mm | 2 | CVDDIA |

# DIAMONDPLUS™ COATED- DIAL230

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N77964 | DIAL230-0.125-D8-S.0-Z2 | 1/8 | 1/8 | 1 | 3 | 2 | CVDDIA |
| N77967 | DIAL230-0.188-D6-S.0-Z2 | 3/16 | 3/16 | 1-1/8 | 3 | 2 | CVDDIA |
| N77970 | DIAL230-0.250-D5-S.0-Z2 | 1/4 | 1/4 | 1-1/4 | 3 | 2 | CVDDIA |
| N72663 | DIAL230-0.250-D7-S.0-Z2 | 1/4 | 1/4 | 1-3/8 | 6 | 2 | CVDDIA |
| N77976 | DIAL230-0.375-D4-S.0-Z2 | 3/8 | 3/8 | 1-3/8 | 3-1/4 | 2 | CVDDIA |
| N18692 | DIAL230-0.500-D4-S.0-Z2 | 1/2 | 1/2 | 1-3/8 | 6 | 2 | CVDDIA |
| N77982 | DIAL230-0.500-D5-S.0-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | CVDDIA |

# DIAMONDPLUS™ COATED- DIA430

SOLID CARBIDE

HELIX 30°

SQUARE END

CENTER CUTTING

- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N77790 | DIA430-0.016-F3-S.0-Z4 | 1/64 | 1/8 | 3/64 | 1-1/2 | 4 | CVDDIA |
| N77793 | DIA430-0.031-F3-S.0-Z4 | 1/32 | 1/8 | 3/32 | 1-1/2 | 4 | CVDDIA |
| N77796 | DIA430-0.063-F3-S.0-Z4 | 1/16 | 1/8 | 3/16 | 1-1/2 | 4 | CVDDIA |
| N77799 | DIA430-0.094-F4-S.0-Z4 | 3/32 | 1/8 | 3/8 | 1-1/2 | 4 | CVDDIA |
| N77802 | DIA430-0.125-D4-S.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | CVDDIA |
| N77805 | DIA430-0.188-D3-S.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | CVDDIA |
| N77808 | DIA430-0.250-D3-S.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | CVDDIA |
| N77814 | DIA430-0.375-D2-S.0-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | CVDDIA |
| N77820 | DIA430-0.500-D2-S.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | CVDDIA |

# DIAMONDPLUS™ COATED- DIA430M

SOLID CARBIDE

HELIX 30°

SQUARE END

CENTER CUTTING

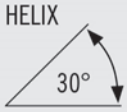
- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N77276 | DIA430M-020-F5-S.0-Z4 | 2mm | 3mm | 10mm | 45mm | 4 | CVDDIA |
| N77277 | DIA430M-030-D5-S.0-Z4 | 3mm | 3mm | 15mm | 45mm | 4 | CVDDIA |
| N77278 | DIA430M-040-D4-S.0-Z4 | 4mm | 4mm | 15mm | 55mm | 4 | CVDDIA |
| N77279 | DIA430M-060-D3-S.0-Z4 | 6mm | 6mm | 20mm | 64mm | 4 | CVDDIA |
| N77280 | DIA430M-080-D2-S.0-Z4 | 8mm | 8mm | 20mm | 64mm | 4 | CVDDIA |

# DIAMONDPLUS™ COATED- DIACR430

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

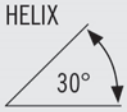
- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N18415 | DIACR430-0.063-F3-R010.0-Z4 | 1/16 | 1/8 | 3/16 | 1-1/2 | 4 | CVDDIA | 0.010 |
| N18416 | DIACR430-0.063-F3-R015.0-Z4 | 1/16 | 1/8 | 3/16 | 1-1/2 | 4 | CVDDIA | 0.015 |
| N18417 | DIACR430-0.125-D4-R015.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | CVDDIA | 0.015 |
| N18418 | DIACR430-0.125-D4-R020.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | CVDDIA | 0.020 |
| N18419 | DIACR430-0.188-D3-R020.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | CVDDIA | 0.020 |
| N18421 | DIACR430-0.250-D3-R020.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | CVDDIA | 0.020 |
| N18422 | DIACR430-0.250-D3-R030.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | CVDDIA | 0.030 |
| N77191 | DIACR430-0.250-D6-R030.0-Z4 | 1/4 | 1/4 | 1-3/8 | 4 | 4 | CVDDIA | 0.030 |
| N18423 | DIACR430-0.375-D2-R020.0-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | CVDDIA | 0.020 |
| N18424 | DIACR430-0.375-D2-R030.0-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | CVDDIA | 0.030 |
| N18425 | DIACR430-0.500-D2-R030.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | CVDDIA | 0.030 |
| N18426 | DIACR430-0.500-D2-R060.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | CVDDIA | 0.060 |
| N77194 | DIACR430-0.500-D3-R030.0-Z4 | 1/2 | 1/2 | 1-3/8 | 4 | 4 | CVDDIA | 0.030 |

# DIAMONDPLUS™ COATED- DIAL430

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N77856 | DIAL430-0.125-D8-S.0-Z4 | 1/8 | 1/8 | 1 | 3 | 4 | CVDDIA |
| N77859 | DIAL430-0.188-D5-S.0-Z4 | 3/16 | 3/16 | 1 | 4 | 4 | CVDDIA |
| N72693 | DIAL430-0.188-D6-S.0-Z4 | 3/16 | 3/16 | 1-1/8 | 3 | 4 | CVDDIA |
| N77862 | DIAL430-0.250-D5-S.0-Z4 | 1/4 | 1/4 | 1-1/4 | 3 | 4 | CVDDIA |
| N72699 | DIAL430-0.250-D6-S.0-Z4 | 1/4 | 1/4 | 1-3/8 | 4 | 4 | CVDDIA |
| N77868 | DIAL430-0.375-D4-S.0-Z4 | 3/8 | 3/8 | 1-3/8 | 3-1/4 | 4 | CVDDIA |
| N72717 | DIAL430-0.375-D5-S.0-Z4 | 3/8 | 3/8 | 1-3/8 | 4 | 4 | CVDDIA |
| N18695 | DIAL430-0.500-D3-S.0-Z4 | 1/2 | 1/2 | 1-3/8 | 4 | 4 | CVDDIA |
| N77874 | DIAL430-0.500-D5-S.0-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | CVDDIA |
| N72729 | DIAL430-0.500-D6-S.0-Z4 | 1/2 | 1/2 | 3 | 6 | 4 | CVDDIA |

# DIAMONDPLUS™ COATED- DIAXSR430

SOLID CARBIDE

HELIX 30°

RADIUS

CENTER CUTTING

- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | RADIUS | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|
| N77222 | DIAXSR430-0.125-E1-R015.0-Z4 | 1/8 | 1/8 | 1/8 | 3 | 4 | 0.015 | 5/8 | 0.115 |
| N77225 | DIAXSR430-0.250-E1-R015.0-Z4 | 1/4 | 1/4 | 1/4 | 4 | 4 | 0.015 | 3/4 | 0.240 |
| N77228 | DIAXSR430-0.375-E1-R030.0-Z4 | 3/8 | 3/8 | 3/8 | 4 | 4 | 0.030 | 1-1/8 | 0.365 |
| N77229 | DIAXSR430-0.500-E1-R060.0-Z4 | 1/2 | 1/2 | 1/2 | 6 | 4 | 0.060 | 1-1/2 | 0.490 |

# DIAMONDPLUS™ COATED- DIAXRR430

SOLID CARBIDE

HELIX 30°

RADIUS

CENTER CUTTING

- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|---|
| N18671 | DIAXRR430-0.031-G3-R005.0-Z4 | 1/32 | 1/8 | 3/32 | 3 | 4 | CVDDIA | 0.005 | 3/8 | 0.028 |
| N18676 | DIAXRR430-0.031-G4-R005.0-Z4 | 1/32 | 1/8 | 3/32 | 3 | 4 | CVDDIA | 0.005 | 1/2 | 0.028 |
| N18672 | DIAXRR430-0.047-G3-R010.0-Z4 | 3/64 | 1/8 | 9/64 | 3 | 4 | CVDDIA | 0.010 | 9/16 | 0.043 |
| N18677 | DIAXRR430-0.047-G4-R010.0-Z4 | 3/64 | 1/8 | 9/64 | 3 | 4 | CVDDIA | 0.010 | 3/4 | 0.043 |
| N18673 | DIAXRR430-0.063-G4-R010.0-Z4 | 1/16 | 1/8 | 3/16 | 3 | 4 | CVDDIA | 0.010 | 3/4 | 0.057 |
| N18678 | DIAXRR430-0.063-G5-R010.0-Z4 | 1/16 | 1/8 | 3/16 | 3 | 4 | CVDDIA | 0.010 | 1 | 0.057 |
| N18674 | DIAXRR430-0.094-G3-R010.0-Z4 | 3/32 | 1/8 | 9/32 | 3 | 4 | CVDDIA | 0.010 | 1 | 0.086 |
| N18679 | DIAXRR430-0.094-G4-R010.0-Z4 | 3/32 | 1/8 | 9/32 | 3 | 4 | CVDDIA | 0.010 | 1-1/2 | 0.086 |
| N18675 | DIAXRR430-0.125-E3-R010.0-Z4 | 1/8 | 1/8 | 3/8 | 3 | 4 | CVDDIA | 0.010 | 1-1/2 | 0.115 |
| N77253 | DIAXRR430-0.125-E6-R030.0-Z4 | 1/8 | 1/8 | 3/4 | 3 | 4 | CVDDIA | 0.030 | 1-1/2 | 0.115 |

# DIAMONDPLUS™ COATED- DIAB230

SOLID CARBIDE

HELIX 30°

BALL END

CENTER CUTTING

- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N77931 | DIAB230-0.016-F3-B.0-Z2 | 1/64 | 1/8 | 3/64 | 1-1/2 | 2 | CVDDIA |
| N77934 | DIAB230-0.031-F3-B.0-Z2 | 1/32 | 1/8 | 3/32 | 1-1/2 | 2 | CVDDIA |
| N77174 | DIAB230-0.047-F3-B.0-Z2 | 3/64 | 1/8 | 1/8 | 1-1/2 | 2 | CVDDIA |
| N77937 | DIAB230-0.063-F3-B.0-Z2 | 1/16 | 1/8 | 3/16 | 1-1/2 | 2 | CVDDIA |
| N77943 | DIAB230-0.125-D4-B.0-Z2 | 1/8 | 1/8 | 1/2 | 1-1/2 | 2 | CVDDIA |
| N77946 | DIAB230-0.188-D3-B.0-Z2 | 3/16 | 3/16 | 5/8 | 2 | 2 | CVDDIA |
| N77949 | DIAB230-0.250-D3-B.0-Z2 | 1/4 | 1/4 | 3/4 | 2-1/2 | 2 | CVDDIA |
| N77961 | DIAB230-0.500-D2-B.0-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | CVDDIA |

# DIAMONDPLUS™ COATED- DIAB230M

SOLID CARBIDE

HELIX 30°

BALL END

CENTER CUTTING

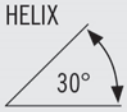
- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N77267 | DIAB230M-010-F4-B.0-Z2 | 1mm | 3mm | 4mm | 45mm | 2 | CVDDIA |
| N77268 | DIAB230M-020-F5-B.0-Z2 | 2mm | 3mm | 10mm | 45mm | 2 | CVDDIA |
| N77269 | DIAB230M-030-D5-B.0-Z2 | 3mm | 3mm | 15mm | 45mm | 2 | CVDDIA |
| N77270 | DIAB230M-040-D4-B.0-Z2 | 4mm | 4mm | 15mm | 55mm | 2 | CVDDIA |
| N77271 | DIAB230M-060-D3-B.0-Z2 | 6mm | 6mm | 20mm | 64mm | 2 | CVDDIA |

# DIAMONDPLUS™ COATED- DIAB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

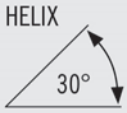
- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N77823 | DIAB430-0.016-F3-B.0-Z4 | 1/64 | 1/8 | 3/64 | 1-1/2 | 4 | CVDDIA |
| N77826 | DIAB430-0.031-F3-B.0-Z4 | 1/32 | 1/8 | 3/32 | 1-1/2 | 4 | CVDDIA |
| N77829 | DIAB430-0.063-F3-B.0-Z4 | 1/16 | 1/8 | 3/16 | 1-1/2 | 4 | CVDDIA |
| N77183 | DIAB430-0.078-F3-B.0-Z4 | 5/64 | 1/8 | 1/4 | 1-1/2 | 4 | CVDDIA |
| N77832 | DIAB430-0.094-F4-B.0-Z4 | 3/32 | 1/8 | 3/8 | 1-1/2 | 4 | CVDDIA |
| N77835 | DIAB430-0.125-D4-B.0-Z4 | 1/8 | 1/8 | 1/2 | 1-1/2 | 4 | CVDDIA |
| N77838 | DIAB430-0.188-D3-B.0-Z4 | 3/16 | 3/16 | 5/8 | 2 | 4 | CVDDIA |
| N77841 | DIAB430-0.250-D3-B.0-Z4 | 1/4 | 1/4 | 3/4 | 2-1/2 | 4 | CVDDIA |
| N77847 | DIAB430-0.375-D2-B.0-Z4 | 3/8 | 3/8 | 7/8 | 2-1/2 | 4 | CVDDIA |
| N77853 | DIAB430-0.500-D2-B.0-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | CVDDIA |

# DIAMONDPLUS™ COATED- DIALB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

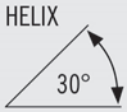
- Designed for carbon fiber, composite applications, graphite and green Ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N77877 | DIALB430-0.125-D8-B.0-Z4 | 1/8 | 1/8 | 1 | 3 | 4 | CVDDIA |
| N77880 | DIALB430-0.188-D5-B.0-Z4 | 3/16 | 3/16 | 1 | 4 | 4 | CVDDIA |
| N72696 | DIALB430-0.188-D6-B.0-Z4 | 3/16 | 3/16 | 1-1/8 | 3 | 4 | CVDDIA |
| N77883 | DIALB430-0.250-D5-B.0-Z4 | 1/4 | 1/4 | 1-1/4 | 3 | 4 | CVDDIA |
| N72702 | DIALB430-0.250-D6-B.0-Z4 | 1/4 | 1/4 | 1-3/8 | 4 | 4 | CVDDIA |
| N72708 | DIALB430-0.250-D7-B.0-Z4 | 1/4 | 1/4 | 1-3/8 | 6 | 4 | CVDDIA |
| N72720 | DIALB430-0.375-D5-B.0-Z4 | 3/8 | 3/8 | 1-3/8 | 4 | 4 | CVDDIA |
| N72726 | DIALB430-0.375-D6-B.0-Z4 | 3/8 | 3/8 | 1-3/8 | 6 | 4 | CVDDIA |
| N18697 | DIALB430-0.500-D3-B.0-Z4 | 1/2 | 1/2 | 1-3/8 | 4 | 4 | CVDDIA |
| N77895 | DIALB430-0.500-D5-B.0-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | CVDDIA |
| N18698 | DIALB430-0.500-D4-B.0-Z4 | 1/2 | 1/2 | 1-3/8 | 6 | 4 | CVDDIA |
| N72732 | DIALB430-0.500-D6-B.0-Z4 | 1/2 | 1/2 | 3 | 6 | 4 | CVDDIA |

# DIAMONDPLUS™ COATED- DIAXSB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

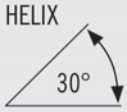
- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|
| N77214 | DIAXSB430-0.063-G1-B.0-Z4 | 1/16 | 1/8 | 1/16 | 3 | 4 | 5/16 | 0.057 |
| N77216 | DIAXSB430-0.125-E1-B.0-Z4 | 1/8 | 1/8 | 1/8 | 3 | 4 | 5/8 | 0.115 |
| N77218 | DIAXSB430-0.250-E1-B.0-Z4 | 1/4 | 1/4 | 1/4 | 4 | 4 | 3/4 | 0.240 |

# DIAMONDPLUS™ COATED- DIAXRB430

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

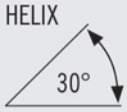
- Designed for carbon fiber, composite applications, graphite and green ceramics

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|
| N18681 | DIAXRB430-0.031-G4-B.0-Z4 | 1/32 | 1/8 | 3/32 | 3 | 4 | CVDDIA | 3/8 | 0.028 |
| N18686 | DIAXRB430-0.031-G5-B.0-Z4 | 1/32 | 1/8 | 3/32 | 3 | 4 | CVDDIA | 1/2 | 0.028 |
| N18682 | DIAXRB430-0.047-G3-B.0-Z4 | 3/64 | 1/8 | 9/64 | 3 | 4 | CVDDIA | 9/16 | 0.043 |
| N18687 | DIAXRB430-0.047-G4-B.0-Z4 | 3/64 | 1/8 | 9/64 | 3 | 4 | CVDDIA | 3/4 | 0.043 |
| N18683 | DIAXRB430-0.063-G4-B.0-Z4 | 1/16 | 1/8 | 3/16 | 3 | 4 | CVDDIA | 3/4 | 0.057 |
| N18688 | DIAXRB430-0.063-G5-B.0-Z4 | 1/16 | 1/8 | 3/16 | 3 | 4 | CVDDIA | 1 | 0.057 |
| N18684 | DIAXRB430-0.094-G3-B.0-Z4 | 3/32 | 1/8 | 9/32 | 3 | 4 | CVDDIA | 1 | 0.086 |
| N18689 | DIAXRB430-0.094-G4-B.0-Z4 | 3/32 | 1/8 | 9/32 | 3 | 4 | CVDDIA | 1-1/2 | 0.086 |
| N18685 | DIAXRB430-0.125-E3-B.0-Z4 | 1/8 | 1/8 | 3/8 | 3 | 4 | CVDDIA | 1-1/2 | 0.115 |
| N18690 | DIAXRB430-0.125-E4-B.0-Z4 | 1/8 | 1/8 | 3/8 | 3 | 4 | CVDDIA | 2 | 0.115 |

# DIAMONDPLUS™ COATED- DIACC

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

- Coarse-pitch
- Chip breaking notches
- Open flute design
- "X" DIM equals the length to helix transition from end teeth
- Designed to avoid delamination
- Designed for carbon fiber, composite applications, graphite and green ceramics

## COARSE-PITCH

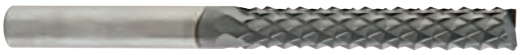
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | "X" DIM |
|---|---|---|---|---|---|---|---|---|
| N77311 | DIACC-0.250-D3-S.0-Z3 | 1/4 | 1/4 | 3/4 | 2-1/2 | 3 | CVDDIA | 0.150 |
| N77312 | DIACC-0.375-D3-S.0-Z3 | 3/8 | 3/8 | 1 | 3 | 3 | CVDDIA | 0.213 |
| N77313 | DIACC-0.500-D3-S.0-Z5 | 1/2 | 1/2 | 1-1/4 | 3 | 5 | CVDDIA | 0.275 |

## FINE-PITCH

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | "X" DIM |
|---|---|---|---|---|---|---|---|---|
| N68196 | DIACC-0.250-D3-S.0-Z5 | 1/4 | 1/4 | 3/4 | 2-1/2 | 5 | CVDDIA | 0.150 |
| N68197 | DIACC-0.375-D3-S.0-Z5 | 3/8 | 3/8 | 1 | 3 | 5 | CVDDIA | 0.213 |
| N68198 | DIACC-0.500-D3-S.0-Z7 | 1/2 | 1/2 | 1-1/4 | 3 | 7 | CVDDIA | 0.275 |

# DIAMONDPLUS™ COATED- DIAEPB

SOLID CARBIDE



- Positive end cutting geometry
- Low cutting forces
- End mill style end teeth geometry
- High shearing capabilities to reduce material delamination
- Designed for carbon fiber, composite applications, graphite and green ceramics

## COARSE-PITCH

- Up to 100% radial engagement

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | COATING |
|---|---|---|---|---|---|---|
| N68077 | DIAEPB-0.125-D1-S.0-Z | 1/8 | 1/8 | 1/2 | 2 | CVDDIA |
| N68078 | DIAEPB-0.250-D2-S.0-Z | 1/4 | 1/4 | 3/4 | 2-1/2 | CVDDIA |
| N68079 | DIAEPB-0.250-D4-S.0-Z | 1/4 | 1/4 | 1-3/8 | 3 | CVDDIA |
| N68081 | DIAEPB-0.375-D1-S.0-Z | 3/8 | 3/8 | 1-3/8 | 3-1/4 | CVDDIA |
| N68083 | DIAEPB-0.500-D1-S.0-Z | 1/2 | 1/2 | 1 | 3 | CVDDIA |
| N68084 | DIAEPB-0.500-D3-S.0-Z | 1/2 | 1/2 | 2 | 4 | CVDDIA |

## FINE-PITCH

- Improved surface finish as compared to coarse-pitch
- Up to 50% radial engagement

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | COATING |
|---|---|---|---|---|---|---|
| N68172 | DIAEPB-0.125-D2-S.0-Z | 1/8 | 1/8 | 1/2 | 1-1/2 | CVDDIA |
| N68173 | DIAEPB-0.250-D1-S.0-Z | 1/4 | 1/4 | 3/4 | 2-1/2 | CVDDIA |
| N68176 | DIAEPB-0.375-D4-S.0-Z | 3/8 | 3/8 | 1-3/8 | 3-1/4 | CVDDIA |
| N68178 | DIAEPB-0.500-D2-S.0-Z | 1/2 | 1/2 | 1 | 3 | CVDDIA |
| N68179 | DIAEPB-0.500-D4-S.0-Z | 1/2 | 1/2 | 2 | 4 | CVDDIA |

# DIAMONDPLUS™ COATED- DIABEB

SOLID CARBIDE

- Positive cutting geometry
- Lower cutting forces
- High shear capabilities to reduce material delamination
- Burr style end teeth geometry
- Designed for carbon fiber, composite applications, graphite and green ceramics

## COARSE-PITCH

- Can be utilized up to 100% radial engagement

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | COATING |
|---|---|---|---|---|---|---|
| N68093 | DIABEB-0.125-D1-S.0-Z | 1/8 | 1/8 | 1/2 | 1-1/2 | CVDDIA |
| N68094 | DIABEB-0.250-D1-S.0-Z | 1/4 | 1/4 | 3/4 | 2-1/2 | CVDDIA |
| N68097 | DIABEB-0.375-D1-S.0-Z | 3/8 | 3/8 | 1-3/8 | 3-1/4 | CVDDIA |
| N68098 | DIABEB-0.375-D7-S.0-Z | 3/8 | 3/8 | 2-1/8 | 4 | CVDDIA |
| N68099 | DIABEB-0.500-D1-S.0-Z | 1/2 | 1/2 | 1 | 3 | CVDDIA |
| N68100 | DIABEB-0.500-D3-S.0-Z | 1/2 | 1/2 | 2 | 4 | CVDDIA |

## FINE-PITCH

- Improved surface finish as compared to coarse-pitch
- Up to 50% radial engagement

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | COATING |
|---|---|---|---|---|---|---|
| N68188 | DIABEB-0.125-D2-S.0-Z | 1/8 | 1/8 | 1/2 | 1-1/2 | CVDDIA |
| N68189 | DIABEB-0.250-D2-S.0-Z | 1/4 | 1/4 | 3/4 | 2-1/2 | CVDDIA |
| N68192 | DIABEB-0.375-D2-S.0-Z | 3/8 | 3/8 | 1-3/8 | 3-1/4 | CVDDIA |
| N68193 | DIABEB-0.375-D8-S.0-Z | 3/8 | 3/8 | 2-1/8 | 4 | CVDDIA |
| N68194 | DIABEB-0.500-D2-S.0-Z | 1/2 | 1/2 | 1 | 3 | CVDDIA |
| N68195 | DIABEB-0.500-D4-S.0-Z | 1/2 | 1/2 | 2 | 4 | CVDDIA |

# DIAMONDPLUS™ COATED- DIAPPB

SOLID CARBIDE

- Drill point design
- Positive end cutting geometry
- Low cutting forces
- High shearing capabilities to reduce material delamination
- Designed for carbon fiber, composite applications, graphite and green ceramics

## COARSE-PITCH

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | COATING |
|---|---|---|---|---|---|---|
| N68085 | DIAPPB-0.125-D1-C.0-Z | 1/8 | 1/8 | 1/2 | 2 | CVDDIA |
| N68086 | DIAPPB-0.250-D1-C.0-Z | 1/4 | 1/4 | 3/4 | 2-1/2 | CVDDIA |
| N68087 | DIAPPB-0.250-D3-C.0-Z | 1/4 | 1/4 | 1-3/8 | 3 | CVDDIA |
| N68088 | DIAPPB-0.250-D5-C.0-Z | 1/4 | 1/4 | 2 | 4 | CVDDIA |

## FINE-PITCH

- Improved surface finish as compared to coarse-pitch

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | COATING |
|---|---|---|---|---|---|---|
| N68180 | DIAPPB-0.125-D2-C.0-Z | 1/8 | 1/8 | 1/2 | 1-1/2 | CVDDIA |
| N68181 | DIAPPB-0.250-D2-C.0-Z | 1/4 | 1/4 | 3/4 | 2-1/2 | CVDDIA |
| N68182 | DIAPPB-0.250-D4-C.0-Z | 1/4 | 1/4 | 1-3/8 | 3 | CVDDIA |
| N68183 | DIAPPB-0.250-D6-C.0-Z | 1/4 | 1/4 | 2 | 4 | CVDDIA |

**DIA230 / DIAB230**

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 2$ | | | | | | | |
| | | | | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 |
| GRAPHITE | | 1.00 | 1.00 | | 1425 | | n (rev/min) | 43548 | 29032 | 21774 | 17419 | 14516 | 10887 | 8710 | 7258 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 | 0.0023 | 0.0027 |
| | | | | 1125 | - | 1725 | $v_f$ (in/min) | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| PLASTIC (SOFT) | | 1.00 | 1.00 | | 1425 | | n (rev/min) | 43548 | 29032 | 21774 | 17419 | 14516 | 10887 | 8710 | 7258 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 | 0.0023 | 0.0027 |
| | | | | 1125 | - | 1725 | $v_f$ (in/min) | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| PLASTIC (HARD) | | 1.00 | 1.00 | | 1425 | | n (rev/min) | 43548 | 29032 | 21774 | 17419 | 14516 | 10887 | 8710 | 7258 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 | 0.0023 | 0.0027 |
| | | | | 1125 | - | 1725 | $v_f$ (in/min) | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| THERMOPLAST | CFRP | 1.00 | 1.00 | | 1313 | | n (rev/min) | 40110 | 26740 | 20055 | 16044 | 13370 | 10028 | 8022 | 6685 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0015 | 0.0020 | 0.0025 | 0.0030 |
| | | | | 1163 | - | 1463 | $v_f$ (in/min) | 39.7 | 39.7 | 39.7 | 39.7 | 39.7 | 39.7 | 39.7 | 39.7 |
| | GRP | 0.80 | 1.00 | | 1425 | | n (rev/min) | 43548 | 29032 | 21774 | 17419 | 14516 | 10887 | 8710 | 7258 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0025 | 0.0030 | 0.0040 | 0.0050 | 0.0059 |
| | | | | 1335 | - | 1515 | $v_f$ (in/min) | 86.2 | 86.2 | 86.2 | 86.2 | 86.2 | 86.2 | 86.2 | 86.2 |
| THERMOSET | CFRP | 1.00 | 1.00 | | 1313 | | n (rev/min) | 40110 | 26740 | 20055 | 16044 | 13370 | 10028 | 8022 | 6685 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0015 | 0.0020 | 0.0025 | 0.0030 |
| | | | | 1162.5 | - | 1462.5 | $v_f$ (in/min) | 39.7 | 39.7 | 39.7 | 39.7 | 39.7 | 39.7 | 39.7 | 39.7 |
| | GRP | 0.80 | 1.00 | | 1425 | | n (rev/min) | 43548 | 29032 | 21774 | 17419 | 14516 | 10887 | 8710 | 7258 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0025 | 0.0030 | 0.0040 | 0.0050 | 0.0059 |
| | | | | 1335 | - | 1515 | $v_f$ (in/min) | 86.2 | 86.2 | 86.2 | 86.2 | 86.2 | 86.2 | 86.2 | 86.2 |

DIA230 / DIAB230

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | Zn = 2 | | | | | | | | |
| | | | | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 |
| GRAPHITE | | 1.00 | 0.40 | | 1900 | | n (rev/min) | 58064 | 38709 | 29032 | 23226 | 19355 | 14516 | 11613 | 9677 |
| | | | | | | | $f_z$ (in) | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0021 | 0.0028 | 0.0034 | 0.0041 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 |
| PLASTIC (SOFT) | | 1.00 | 0.40 | | 1900 | | n (rev/min) | 58064 | 38709 | 29032 | 23226 | 19355 | 14516 | 11613 | 9677 |
| | | | | | | | $f_z$ (in) | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0021 | 0.0028 | 0.0034 | 0.0041 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 |
| PLASTIC (HARD) | | 1.00 | 0.40 | | 1900 | | n (rev/min) | 58064 | 38709 | 29032 | 23226 | 19355 | 14516 | 11613 | 9677 |
| | | | | | | | $f_z$ (in) | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0021 | 0.0028 | 0.0034 | 0.0041 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 | 79.8 |
| THERMOPLAST | CFRP | 1.00 | 0.40 | | 1750 | | n (rev/min) | 53480 | 35653 | 26740 | 21392 | 17827 | 13370 | 10696 | 8913 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 | 0.0038 | 0.0045 |
| | | | | 1600 | - | 1900 | $v_f$ (in/min) | 80.2 | 80.2 | 80.2 | 80.2 | 80.2 | 80.2 | 80.2 | 80.2 |
| | GRP | 1.00 | 0.40 | | 1900 | | n (rev/min) | 58064 | 38709 | 29032 | 23226 | 19355 | 14516 | 11613 | 9677 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 | 0.0038 | 0.0045 | 0.0060 | 0.0075 | 0.0090 |
| | | | | 1810 | - | 1990 | $v_f$ (in/min) | 174.2 | 174.2 | 174.2 | 174.2 | 174.2 | 174.2 | 174.2 | 174.2 |
| THERMOSET | CFRP | 1.00 | 0.40 | | 1750 | | n (rev/min) | 53480 | 35653 | 26740 | 21392 | 17827 | 13370 | 10696 | 8913 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 | 0.0038 | 0.0045 |
| | | | | 1600 | - | 1900 | $v_f$ (in/min) | 80.2 | 80.2 | 80.2 | 80.2 | 80.2 | 80.2 | 80.2 | 80.2 |
| | GRP | 1.00 | 0.40 | | 1900 | | n (rev/min) | 58064 | 38709 | 29032 | 23226 | 19355 | 14516 | 11613 | 9677 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 | 0.0038 | 0.0045 | 0.0060 | 0.0075 | 0.0090 |
| | | | | 1810 | - | 1990 | $v_f$ (in/min) | 174.2 | 174.2 | 174.2 | 174.2 | 174.2 | 174.2 | 174.2 | 174.2 |

DIAL230

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | Zn = 2 | | | | | | | |
| | | | | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 |
| GRAPHITE | | 1.00 | 1.00 | | 1140 | | n (rev/min) | 34838 | 23226 | 17419 | 13935 | 11613 | 8710 | 6968 | 5806 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0010 | 0.0014 | 0.0017 | 0.0020 |
| | | | | 840 | - | 1440 | $v_f$ (in/min) | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 |
| PLASTIC (SOFT) | | 1.00 | 1.00 | | 1140 | | n (rev/min) | 34838 | 23226 | 17419 | 13935 | 11613 | 8710 | 6968 | 5806 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0010 | 0.0014 | 0.0017 | 0.0020 |
| | | | | 840 | - | 1440 | $v_f$ (in/min) | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 |
| PLASTIC (HARD) | | 1.00 | 1.00 | | 1140 | | n (rev/min) | 34838 | 23226 | 17419 | 13935 | 11613 | 8710 | 6968 | 5806 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0010 | 0.0014 | 0.0017 | 0.0020 |
| | | | | 840 | - | 1440 | $v_f$ (in/min) | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 |
| THERMOPLAST | CFRP | 1.00 | 1.00 | | 1050 | | n (rev/min) | 32088 | 21392 | 16044 | 12835 | 10696 | 8022 | 6418 | 5348 |
| | | | | | | | $f_z$ (in) | 0.0004 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0022 |
| | | | | 900 | - | 1200 | $v_f$ (in/min) | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 |
| | GRP | 0.80 | 1.00 | | 1140 | | n (rev/min) | 34838 | 23226 | 17419 | 13935 | 11613 | 8710 | 6968 | 5806 |
| | | | | | | | $f_z$ (in) | 0.0007 | 0.0011 | 0.0015 | 0.0019 | 0.0022 | 0.0030 | 0.0037 | 0.0045 |
| | | | | 1050 | - | 1230 | $v_f$ (in/min) | 51.7 | 51.7 | 51.7 | 51.7 | 51.7 | 51.7 | 51.7 | 51.7 |
| THERMOSET | CFRP | 1.00 | 1.00 | | 1050 | | n (rev/min) | 32088 | 21392 | 16044 | 12835 | 10696 | 8022 | 6418 | 5348 |
| | | | | | | | $f_z$ (in) | 0.0004 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0022 |
| | | | | 900 | - | 1200 | $v_f$ (in/min) | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 |
| | GRP | 0.80 | 1.00 | | 1140 | | n (rev/min) | 34838 | 23226 | 17419 | 13935 | 11613 | 8710 | 6968 | 5806 |
| | | | | | | | $f_z$ (in) | 0.0007 | 0.0011 | 0.0015 | 0.0019 | 0.0022 | 0.0030 | 0.0037 | 0.0045 |
| | | | | 1050 | - | 1230 | $v_f$ (in/min) | 51.7 | 51.7 | 51.7 | 51.7 | 51.7 | 51.7 | 51.7 | 51.7 |

DIAL230

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | Zn = 2 | | | | | | | | |
| | | | | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 |
| GRAPHITE | | 1.00 | 0.40 | | 1520 | | n (rev/min) | 46451 | 30967 | 23226 | 18580 | 15484 | 11613 | 9290 | 7742 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0021 | 0.0026 | 0.0031 |
| | | | | 1220 | - | 1820 | $v_f$ (in/min) | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 |
| PLASTIC (SOFT) | | 1.00 | 0.40 | | 1520 | | n (rev/min) | 46451 | 30967 | 23226 | 18580 | 15484 | 11613 | 9290 | 7742 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0021 | 0.0026 | 0.0031 |
| | | | | 1220 | - | 1820 | $v_f$ (in/min) | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 |
| PLASTIC (HARD) | | 1.00 | 0.40 | | 1520 | | n (rev/min) | 46451 | 30967 | 23226 | 18580 | 15484 | 11613 | 9290 | 7742 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0021 | 0.0026 | 0.0031 |
| | | | | 1220 | - | 1820 | $v_f$ (in/min) | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 |
| THERMOPLAST | CFRP | 1.00 | 0.40 | | 1400 | | n (rev/min) | 42784 | 28523 | 21392 | 17114 | 14261 | 10696 | 8557 | 7131 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0023 | 0.0028 | 0.0034 |
| | | | | 1250 | - | 1550 | $v_f$ (in/min) | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 |
| | GRP | 1.00 | 0.40 | | 1520 | | n (rev/min) | 46451 | 30967 | 23226 | 18580 | 15484 | 11613 | 9290 | 7742 |
| | | | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 |
| | | | | 1430 | - | 1610 | $v_f$ (in/min) | 104.5 | 104.5 | 104.5 | 104.5 | 104.5 | 104.5 | 104.5 | 104.5 |
| THERMOSET | CFRP | 1.00 | 0.40 | | 1400 | | n (rev/min) | 42784 | 28523 | 21392 | 17114 | 14261 | 10696 | 8557 | 7131 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0023 | 0.0028 | 0.0034 |
| | | | | 1250 | - | 1550 | $v_f$ (in/min) | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 |
| | GRP | 1.00 | 0.40 | | 1520 | | n (rev/min) | 46451 | 30967 | 23226 | 18580 | 15484 | 11613 | 9290 | 7742 |
| | | | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 |
| | | | | 1430 | - | 1610 | $v_f$ (in/min) | 104.5 | 104.5 | 104.5 | 104.5 | 104.5 | 104.5 | 104.5 | 104.5 |

**DIA230M / DIAB230M**

| SLOTTING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | | Zn = 2 | | | | | | |
| | | | | | | | 4 | 6 | 8 | 10 | 12 | 14 | 16 |
| GRAPHITE | | 1.00 | 1.00 | 434 | | n (rev/min) | 34540 | 23020 | 17270 | 13810 | 11510 | 9870 | 8630 |
| | | | | | | $f_z$ (mm) | 0.015 | 0.022 | 0.029 | 0.036 | 0.044 | 0.051 | 0.058 |
| | | | | 343 - 526 | | $v_f$ (mm/min) | 1003 | 1003 | 1003 | 1003 | 1003 | 1003 | 1002 |
| PLASTIC (SOFT) | | 1.00 | 1.00 | 434 | | n (rev/min) | 34540 | 23020 | 17270 | 13810 | 11510 | 9870 | 8630 |
| | | | | | | $f_z$ (mm) | 0.015 | 0.022 | 0.029 | 0.036 | 0.044 | 0.051 | 0.058 |
| | | | | 343 - 526 | | $v_f$ (mm/min) | 1003 | 1003 | 1003 | 1003 | 1003 | 1003 | 1002 |
| PLASTIC (HARD) | | 1.00 | 1.00 | 434 | | n (rev/min) | 34540 | 23020 | 17270 | 13810 | 11510 | 9870 | 8630 |
| | | | | | | $f_z$ (mm) | 0.015 | 0.022 | 0.029 | 0.036 | 0.044 | 0.051 | 0.058 |
| | | | | 343 - 526 | | $v_f$ (mm/min) | 1003 | 1003 | 1003 | 1003 | 1003 | 1003 | 1002 |
| THERMOPLAST | CFRP | 1.00 | 1.00 | 400 | | n (rev/min) | 31830 | 21220 | 15920 | 12730 | 10610 | 9090 | 7960 |
| | | | | | | $f_z$ (mm) | 0.016 | 0.024 | 0.032 | 0.040 | 0.048 | 0.055 | 0.063 |
| | | | | 354 - 446 | | $v_f$ (mm/min) | 1008 | 1008 | 1009 | 1008 | 1008 | 1008 | 1009 |
| | GRP | 0.80 | 1.00 | 434 | | n (rev/min) | 34540 | 23020 | 17270 | 13810 | 11510 | 9870 | 8630 |
| | | | | | | $f_z$ (mm) | 0.032 | 0.048 | 0.063 | 0.079 | 0.095 | 0.111 | 0.127 |
| | | | | 407 - 462 | | $v_f$ (mm/min) | 2188 | 2188 | 2188 | 2188 | 2188 | 2189 | 2187 |
| THERMOSET | CFRP | 1.00 | 1.00 | 400 | | n (rev/min) | 31830 | 21220 | 15920 | 12730 | 10610 | 9090 | 7960 |
| | | | | | | $f_z$ (mm) | 0.016 | 0.024 | 0.032 | 0.040 | 0.048 | 0.055 | 0.063 |
| | | | | 354 - 446 | | $v_f$ (mm/min) | 1008 | 1008 | 1009 | 1008 | 1008 | 1008 | 1009 |
| | GRP | 0.80 | 1.00 | 434 | | n (rev/min) | 34540 | 23020 | 17270 | 13810 | 11510 | 9870 | 8630 |
| | | | | | | $f_z$ (mm) | 0.032 | 0.048 | 0.063 | 0.079 | 0.095 | 0.111 | 0.127 |
| | | | | 407 - 462 | | $v_f$ (mm/min) | 2188 | 2188 | 2188 | 2188 | 2188 | 2189 | 2187 |

**DIA230M / DIAB230M**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | | Zn = 2 | | | | | | | |
| | | | | | | | 4 | 6 | 8 | 10 | 12 | 14 | 16 |
| GRAPHITE | | 1.00 | 0.40 | | 579 | | n (rev/min) | 46080 | 30720 | 23040 | 18430 | 15360 | 13160 | 11520 |
| | | | | | | | $f_z$ (mm) | 0.022 | 0.033 | 0.044 | 0.055 | 0.066 | 0.077 | 0.088 |
| | | | | 488 | - | 671 | $v_f$ (mm/min) | 2028 | 2028 | 2028 | 2027 | 2028 | 2027 | 2028 |
| PLASTIC (SOFT) | | 1.00 | 0.40 | | 579 | | n (rev/min) | 46080 | 30720 | 23040 | 18430 | 15360 | 13160 | 11520 |
| | | | | | | | $f_z$ (mm) | 0.015 | 0.022 | 0.029 | 0.036 | 0.044 | 0.051 | 0.058 |
| | | | | 488 | - | 671 | $v_f$ (mm/min) | 1338 | 1338 | 1338 | 1338 | 1338 | 1338 | 1338 |
| PLASTIC (HARD) | | 1.00 | 0.40 | | 579 | | n (rev/min) | 46080 | 30720 | 23040 | 18430 | 15360 | 13160 | 11520 |
| | | | | | | | $f_z$ (mm) | 0.015 | 0.022 | 0.029 | 0.036 | 0.044 | 0.051 | 0.058 |
| | | | | 488 | - | 671 | $v_f$ (mm/min) | 1338 | 1338 | 1338 | 1338 | 1338 | 1338 | 1338 |
| THERMOPLAST | CFRP | 1.00 | 0.40 | | 533 | | n (rev/min) | 42410 | 28280 | 21210 | 16970 | 14140 | 12120 | 10600 |
| | | | | | | | $f_z$ (mm) | 0.016 | 0.024 | 0.032 | 0.040 | 0.048 | 0.055 | 0.063 |
| | | | | 488 | - | 579 | $v_f$ (mm/min) | 1344 | 1344 | 1344 | 1344 | 1344 | 1344 | 1343 |
| | GRP | 1.00 | 0.40 | | 579 | | n (rev/min) | 46080 | 30720 | 23040 | 18430 | 15360 | 13160 | 11520 |
| | | | | | | | $f_z$ (mm) | 0.032 | 0.048 | 0.063 | 0.079 | 0.095 | 0.111 | 0.127 |
| | | | | 552 | - | 607 | $v_f$ (mm/min) | 2920 | 2920 | 2920 | 2919 | 2920 | 2918 | 2920 |
| THERMOSET | CFRP | 1.00 | 0.40 | | 533 | | n (rev/min) | 42410 | 28280 | 21210 | 16970 | 14140 | 12120 | 10600 |
| | | | | | | | $f_z$ (mm) | 0.016 | 0.024 | 0.032 | 0.040 | 0.048 | 0.055 | 0.063 |
| | | | | 488 | - | 579 | $v_f$ (mm/min) | 1344 | 1344 | 1344 | 1344 | 1344 | 1344 | 1343 |
| | GRP | 1.00 | 0.40 | | 579 | | n (rev/min) | 46080 | 30720 | 23040 | 18430 | 15360 | 13160 | 11520 |
| | | | | | | | $f_z$ (mm) | 0.032 | 0.048 | 0.063 | 0.079 | 0.095 | 0.111 | 0.127 |
| | | | | 552 | - | 607 | $v_f$ (mm/min) | 2920 | 2920 | 2920 | 2919 | 2920 | 2918 | 2920 |

**DIA430 / DIACR430 / DIAB430**

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | $Z_n = 4$ | | | | | | | | |
| | | | | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 |
| GRAPHITE | | 1.00 | 1.00 | | 1425 | | n (rev/min) | 43548 | 29032 | 21774 | 17419 | 14516 | 10887 | 8710 | 7258 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 | 0.0023 | 0.0027 |
| | | | | 1125 | - | 1725 | $v_f$ (in/min) | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 |
| PLASTIC (SOFT) | | 1.00 | 1.00 | | 1425 | | n (rev/min) | 43548 | 29032 | 21774 | 17419 | 14516 | 10887 | 8710 | 7258 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 | 0.0023 | 0.0027 |
| | | | | 1125 | - | 1725 | $v_f$ (in/min) | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 |
| PLASTIC (HARD) | | 1.00 | 1.00 | | 1425 | | n (rev/min) | 43548 | 29032 | 21774 | 17419 | 14516 | 10887 | 8710 | 7258 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 | 0.0023 | 0.0027 |
| | | | | 1125 | - | 1725 | $v_f$ (in/min) | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 | 79.0 |
| THERMOPLAST | CFRP | 1.00 | 1.00 | | 1313 | | $f_z$ (in) | 40110 | 26740 | 20055 | 16044 | 13370 | 10028 | 8022 | 6685 |
| | | | | | | | $v_f$ (in/min) | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0015 | 0.0020 | 0.0025 | 0.0030 |
| | | | | 1163 | - | 1463 | $f_z$ (in) | 79.4 | 79.4 | 79.4 | 79.4 | 79.4 | 79.4 | 79.4 | 79.4 |
| | GRP | 0.80 | 1.00 | | 1425 | | $v_f$ (in/min) | 43548 | 29032 | 21774 | 17419 | 14516 | 10887 | 8710 | 7258 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0025 | 0.0030 | 0.0040 | 0.0050 | 0.0059 |
| | | | | 1335 | - | 1515 | $v_f$ (in/min) | 172.5 | 172.5 | 172.5 | 172.4 | 172.5 | 172.5 | 172.5 | 172.5 |
| THERMOSET | CFRP | 1.00 | 1.00 | | 1313 | | $f_z$ (in) | 40110 | 26740 | 20055 | 16044 | 13370 | 10028 | 8022 | 6685 |
| | | | | | | | $v_f$ (in/min) | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0015 | 0.0020 | 0.0025 | 0.0030 |
| | | | | 1162.5 | - | 1462.5 | $f_z$ (in) | 79.4 | 79.4 | 79.4 | 79.4 | 79.4 | 79.4 | 79.4 | 79.4 |
| | GRP | 0.80 | 1.00 | | 1425 | | $v_f$ (in/min) | 43548 | 29032 | 21774 | 17419 | 14516 | 10887 | 8710 | 7258 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0025 | 0.0030 | 0.0040 | 0.0050 | 0.0059 |
| | | | | 1335 | - | 1515 | $v_f$ (in/min) | 172.5 | 172.5 | 172.5 | 172.4 | 172.5 | 172.5 | 172.5 | 172.5 |

**DIA430 / DIACR430 / DIAB430**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | | | | | |
| | | | | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 |
| GRAPHITE | | 1.00 | 0.40 | | 1900 | | n (rev/min) | 58064 | 38709 | 29032 | 23226 | 19355 | 14516 | 11613 | 9677 |
| | | | | | | | $f_z$ (in) | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0021 | 0.0028 | 0.0034 | 0.0041 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 |
| PLASTIC (SOFT) | | 1.00 | 0.40 | | 1900 | | n (rev/min) | 58064 | 38709 | 29032 | 23226 | 19355 | 14516 | 11613 | 9677 |
| | | | | | | | $f_z$ (in) | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0021 | 0.0028 | 0.0034 | 0.0041 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 |
| PLASTIC (HARD) | | 1.00 | 0.40 | | 1900 | | n (rev/min) | 58064 | 38709 | 29032 | 23226 | 19355 | 14516 | 11613 | 9677 |
| | | | | | | | $f_z$ (in) | 0.0007 | 0.0010 | 0.0014 | 0.0017 | 0.0021 | 0.0028 | 0.0034 | 0.0041 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 | 159.7 |
| THERMOPLAST | CFRP | 1.00 | 0.40 | | 1750 | | n (rev/min) | 53480 | 35653 | 26740 | 21392 | 17827 | 13370 | 10696 | 8913 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 | 0.0038 | 0.0045 |
| | | | | 1600 | - | 1900 | $v_f$ (in/min) | 160.4 | 160.4 | 160.4 | 160.4 | 160.4 | 160.4 | 160.4 | 160.4 |
| | GRP | 1.00 | 0.40 | | 1900 | | n (rev/min) | 58064 | 38709 | 29032 | 23226 | 19355 | 14516 | 11613 | 9677 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 | 0.0038 | 0.0045 | 0.0060 | 0.0075 | 0.0090 |
| | | | | 1810 | - | 1990 | $v_f$ (in/min) | 348.4 | 348.4 | 348.4 | 348.4 | 348.4 | 348.4 | 348.4 | 348.4 |
| THERMOSET | CFRP | 1.00 | 0.40 | | 1750 | | n (rev/min) | 53480 | 35653 | 26740 | 21392 | 17827 | 13370 | 10696 | 8913 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 | 0.0038 | 0.0045 |
| | | | | 1600 | - | 1900 | $v_f$ (in/min) | 160.4 | 160.4 | 160.4 | 160.4 | 160.4 | 160.4 | 160.4 | 160.4 |
| | GRP | 1.00 | 0.40 | | 1900 | | n (rev/min) | 58064 | 38709 | 29032 | 23226 | 19355 | 14516 | 11613 | 9677 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 | 0.0038 | 0.0045 | 0.0060 | 0.0075 | 0.0090 |
| | | | | 1810 | - | 1990 | $v_f$ (in/min) | 348.4 | 348.4 | 348.4 | 348.4 | 348.4 | 348.4 | 348.4 | 348.4 |

**DIAXSR430 / DIAXSB430 / DIAL430 / DIALB430 / DIAXRR430 / DIAXRB430**

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | | | | | |
| | | | | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 |
| GRAPHITE | | 1.00 | 1.00 | | 1140 | | n (rev/min) | 34838 | 23226 | 17419 | 13935 | 11613 | 8710 | 6968 | 5806 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0010 | 0.0014 | 0.0017 | 0.0020 |
| | | | | 840 | - | 1440 | $v_f$ (in/min) | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 |
| PLASTIC (SOFT) | | 1.00 | 1.00 | | 1140 | | n (rev/min) | 34838 | 23226 | 17419 | 13935 | 11613 | 8710 | 6968 | 5806 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0010 | 0.0014 | 0.0017 | 0.0020 |
| | | | | 840 | - | 1440 | $v_f$ (in/min) | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 |
| PLASTIC (HARD) | | 1.00 | 1.00 | | 1140 | | n (rev/min) | 34838 | 23226 | 17419 | 13935 | 11613 | 8710 | 6968 | 5806 |
| | | | | | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0010 | 0.0014 | 0.0017 | 0.0020 |
| | | | | 840 | - | 1440 | $v_f$ (in/min) | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 | 47.4 |
| THERMOPLAST | CFRP | 1.00 | 1.00 | | 1050 | | n (rev/min) | 32088 | 21392 | 16044 | 12835 | 10696 | 8022 | 6418 | 5348 |
| | | | | | | | $f_z$ (in) | 0.0004 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0022 |
| | | | | 900 | - | 1200 | $v_f$ (in/min) | 47.7 | 47.7 | 47.7 | 47.6 | 47.7 | 47.7 | 47.7 | 47.7 |
| | GRP | 0.80 | 1.00 | | 1140 | | n (rev/min) | 34838 | 23226 | 17419 | 13935 | 11613 | 8710 | 6968 | 5806 |
| | | | | | | | $f_z$ (in) | 0.0007 | 0.0011 | 0.0015 | 0.0019 | 0.0022 | 0.0030 | 0.0037 | 0.0045 |
| | | | | 1050 | - | 1230 | $v_f$ (in/min) | 103.5 | 103.5 | 103.5 | 103.5 | 103.5 | 103.5 | 103.5 | 103.5 |
| THERMOSET | CFRP | 1.00 | 1.00 | | 1050 | | n (rev/min) | 32088 | 21392 | 16044 | 12835 | 10696 | 8022 | 6418 | 5348 |
| | | | | | | | $f_z$ (in) | 0.0004 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0022 |
| | | | | 900 | - | 1200 | $v_f$ (in/min) | 47.7 | 47.7 | 47.7 | 47.6 | 47.7 | 47.7 | 47.7 | 47.7 |
| | GRP | 0.80 | 1.00 | | 1140 | | n (rev/min) | 34838 | 23226 | 17419 | 13935 | 11613 | 8710 | 6968 | 5806 |
| | | | | | | | $f_z$ (in) | 0.0007 | 0.0011 | 0.0015 | 0.0019 | 0.0022 | 0.0030 | 0.0037 | 0.0045 |
| | | | | 1050 | - | 1230 | $v_f$ (in/min) | 103.5 | 103.5 | 103.5 | 103.5 | 103.5 | 103.5 | 103.5 | 103.5 |

**DIAXSR430 / DIAXSB430 / DIAL430 / DIALB430 / DIAXRR430 / DIAXRB430**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | | | | | |
| | | | | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 |
| GRAPHITE | | 1.00 | 0.40 | | 1520 | | n (rev/min) | 46451 | 30967 | 23226 | 18580 | 15484 | 11613 | 9290 | 7742 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0021 | 0.0026 | 0.0031 |
| | | | | 1220 | - | 1820 | $v_f$ (in/min) | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 |
| PLASTIC (SOFT) | | 1.00 | 0.40 | | 1520 | | n (rev/min) | 46451 | 30967 | 23226 | 18580 | 15484 | 11613 | 9290 | 7742 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0021 | 0.0026 | 0.0031 |
| | | | | 1220 | - | 1820 | $v_f$ (in/min) | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 |
| PLASTIC (HARD) | | 1.00 | 0.40 | | 1520 | | n (rev/min) | 46451 | 30967 | 23226 | 18580 | 15484 | 11613 | 9290 | 7742 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0021 | 0.0026 | 0.0031 |
| | | | | 1220 | - | 1820 | $v_f$ (in/min) | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 | 95.8 |
| THERMOPLAST | CFRP | 1.00 | 0.40 | | 1400 | | n (rev/min) | 42784 | 28523 | 21392 | 17114 | 14261 | 10696 | 8557 | 7131 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0023 | 0.0028 | 0.0034 |
| | | | | 1250 | - | 1550 | $v_f$ (in/min) | 96.3 | 96.3 | 96.3 | 96.3 | 96.3 | 96.3 | 96.3 | 96.3 |
| | GRP | 1.00 | 0.40 | | 1520 | | n (rev/min) | 46451 | 30967 | 23226 | 18580 | 15484 | 11613 | 9290 | 7742 |
| | | | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 |
| | | | | 1430 | - | 1610 | $v_f$ (in/min) | 209.0 | 209.0 | 209.0 | 209.0 | 209.0 | 209.0 | 209.0 | 209.0 |
| THERMOSET | CFRP | 1.00 | 0.40 | | 1400 | | n (rev/min) | 42784 | 28523 | 21392 | 17114 | 14261 | 10696 | 8557 | 7131 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0008 | 0.0011 | 0.0014 | 0.0017 | 0.0023 | 0.0028 | 0.0034 |
| | | | | 1250 | - | 1550 | $v_f$ (in/min) | 96.3 | 96.3 | 96.3 | 96.3 | 96.3 | 96.3 | 96.3 | 96.3 |
| | GRP | 1.00 | 0.40 | | 1520 | | n (rev/min) | 46451 | 30967 | 23226 | 18580 | 15484 | 11613 | 9290 | 7742 |
| | | | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 |
| | | | | 1430 | - | 1610 | $v_f$ (in/min) | 209.0 | 209.0 | 209.0 | 209.0 | 209.0 | 209.0 | 209.0 | 209.0 |

DIA430M

| SLOTTING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | | $Z_n = 4$ | | | | | | | |
| | | | | | | | | 4 | 6 | 8 | 10 | 12 | 14 | 16 |
| GRAPHITE | | 1.00 | 1.00 | | 434 | | n (rev/min) | 34540 | 23020 | 17270 | 13810 | 11510 | 9870 | 8630 |
| | | | | | | | $f_z$ (mm) | 0.015 | 0.022 | 0.029 | 0.036 | 0.044 | 0.051 | 0.058 |
| | | | | 343 | - | 526 | $v_f$ (mm/min) | 2006 | 2006 | 2006 | 2005 | 2006 | 2006 | 2005 |
| PLASTIC (SOFT) | | 1.00 | 1.00 | | 434 | | n (rev/min) | 34540 | 23020 | 17270 | 13810 | 11510 | 9870 | 8630 |
| | | | | | | | $f_z$ (mm) | 0.015 | 0.022 | 0.029 | 0.036 | 0.044 | 0.051 | 0.058 |
| | | | | 343 | - | 526 | $v_f$ (mm/min) | 2006 | 2006 | 2006 | 2005 | 2006 | 2006 | 2005 |
| PLASTIC (HARD) | | 1.00 | 1.00 | | 434 | | n (rev/min) | 34540 | 23020 | 17270 | 13810 | 11510 | 9870 | 8630 |
| | | | | | | | $f_z$ (mm) | 0.015 | 0.022 | 0.029 | 0.036 | 0.044 | 0.051 | 0.058 |
| | | | | 343 | - | 526 | $v_f$ (mm/min) | 2006 | 2006 | 2006 | 2005 | 2006 | 2006 | 2005 |
| THERMOPLAST | CFRP | 1.00 | 1.00 | | 400 | | n (rev/min) | 31830 | 21220 | 15920 | 12730 | 10610 | 9090 | 7960 |
| | | | | | | | $f_z$ (mm) | 0.016 | 0.024 | 0.032 | 0.040 | 0.048 | 0.055 | 0.063 |
| | | | | 354 | - | 446 | $v_f$ (mm/min) | 2017 | 2017 | 2017 | 2016 | 2017 | 2016 | 2017 |
| | GRP | 0.80 | 1.00 | | 434 | | n (rev/min) | 34540 | 23020 | 17270 | 13810 | 11510 | 9870 | 8630 |
| | | | | | | | $f_z$ (mm) | 0.032 | 0.048 | 0.063 | 0.079 | 0.095 | 0.111 | 0.127 |
| | | | | 407 | - | 462 | $v_f$ (mm/min) | 4377 | 4376 | 4377 | 4375 | 4376 | 4378 | 4374 |
| THERMOSET | CFRP | 1.00 | 1.00 | | 400 | | n (rev/min) | 31830 | 21220 | 15920 | 12730 | 10610 | 9090 | 7960 |
| | | | | | | | $f_z$ (mm) | 0.016 | 0.024 | 0.032 | 0.040 | 0.048 | 0.055 | 0.063 |
| | | | | 354 | - | 446 | $v_f$ (mm/min) | 2017 | 2017 | 2017 | 2016 | 2017 | 2016 | 2017 |
| | GRP | 0.80 | 1.00 | | 434 | | n (rev/min) | 34540 | 23020 | 17270 | 13810 | 11510 | 9870 | 8630 |
| | | | | | | | $f_z$ (mm) | 0.032 | 0.048 | 0.063 | 0.079 | 0.095 | 0.111 | 0.127 |
| | | | | 407 | - | 462 | $v_f$ (mm/min) | 4377 | 4376 | 4377 | 4375 | 4376 | 4378 | 4374 |

DIA430M

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | | $Z_n = 4$ | | | | | | | |
| | | | | | | | 4 | 6 | 8 | 10 | 12 | 14 | 16 |
| GRAPHITE | | 1.00 | 0.40 | | 579 | | n (rev/min) | 46080 | 30720 | 23040 | 18430 | 15360 | 13160 | 11520 |
| | | | | | | | $f_z$ (mm) | 0.022 | 0.033 | 0.044 | 0.055 | 0.066 | 0.077 | 0.088 |
| | | | | 488 | - | 671 | $v_f$ (mm/min) | 4055 | 4055 | 4055 | 4055 | 4055 | 4053 | 4055 |
| PLASTIC (SOFT) | | 1.00 | 0.40 | | 579 | | n (rev/min) | 46080 | 30720 | 23040 | 18430 | 15360 | 13160 | 11520 |
| | | | | | | | $f_z$ (mm) | 0.015 | 0.022 | 0.029 | 0.036 | 0.044 | 0.051 | 0.058 |
| | | | | 488 | - | 671 | $v_f$ (mm/min) | 2676 | 2676 | 2676 | 2676 | 2676 | 2675 | 2676 |
| PLASTIC (HARD) | | 1.00 | 0.40 | | 579 | | n (rev/min) | 46080 | 30720 | 23040 | 18430 | 15360 | 13160 | 11520 |
| | | | | | | | $f_z$ (mm) | 0.015 | 0.022 | 0.029 | 0.036 | 0.044 | 0.051 | 0.058 |
| | | | | 488 | - | 671 | $v_f$ (mm/min) | 2676 | 2676 | 2676 | 2676 | 2676 | 2675 | 2676 |
| THERMOPLAST | CFRP | 1.00 | 0.40 | | 533 | | n (rev/min) | 42410 | 28280 | 21210 | 16970 | 14140 | 12120 | 10600 |
| | | | | | | | $f_z$ (mm) | 0.016 | 0.024 | 0.032 | 0.040 | 0.048 | 0.055 | 0.063 |
| | | | | 488 | - | 579 | $v_f$ (mm/min) | 2687 | 2688 | 2688 | 2688 | 2688 | 2688 | 2686 |
| | GRP | 1.00 | 0.40 | | 579 | | n (rev/min) | 46080 | 30720 | 23040 | 18430 | 15360 | 13160 | 11520 |
| | | | | | | | $f_z$ (mm) | 0.032 | 0.048 | 0.063 | 0.079 | 0.095 | 0.111 | 0.127 |
| | | | | 552 | - | 607 | $v_f$ (mm/min) | 5839 | 5839 | 5839 | 5839 | 5839 | 5837 | 5839 |
| THERMOSET | CFRP | 1.00 | 0.40 | | 533 | | n (rev/min) | 42410 | 28280 | 21210 | 16970 | 14140 | 12120 | 10600 |
| | | | | | | | $f_z$ (mm) | 0.016 | 0.024 | 0.032 | 0.040 | 0.048 | 0.055 | 0.063 |
| | | | | 488 | - | 579 | $v_f$ (mm/min) | 2687 | 2688 | 2688 | 2688 | 2688 | 2688 | 2686 |
| | GRP | 1.00 | 0.40 | | 579 | | n (rev/min) | 46080 | 30720 | 23040 | 18430 | 15360 | 13160 | 11520 |
| | | | | | | | $f_z$ (mm) | 0.032 | 0.048 | 0.063 | 0.079 | 0.095 | 0.111 | 0.127 |
| | | | | 552 | - | 607 | $v_f$ (mm/min) | 5839 | 5839 | 5839 | 5839 | 5839 | 5837 | 5839 |

Niagara Cutter

**DIACC COARSE-PITCH**

| SLOTTING | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 3$ 1/4 | $Z_n = 3$ 3/8 | $Z_n = 5$ 1/2 |
| GRAPHITE | | 1.00 | 1.00 | | 1425 | | n (rev/min) | 21774 | 14516 | 10887 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 |
| | | | | 1125 | - | 1725 | $v_f$ (in/min) | 59.3 | 59.3 | 98.8 |
| PLASTIC (SOFT) | | 1.00 | 1.00 | | 1425 | | n (rev/min) | 21774 | 14516 | 10887 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 |
| | | | | 1125 | - | 1725 | $v_f$ (in/min) | 59.3 | 59.3 | 98.8 |
| PLASTIC (HARD) | | 1.00 | 1.00 | | 1425 | | n (rev/min) | 21774 | 14516 | 10887 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 |
| | | | | 1125 | - | 1725 | $v_f$ (in/min) | 59.3 | 59.3 | 98.8 |
| THERMOPLAST | CFRP | 1.00 | 1.00 | | 1313 | | n (rev/min) | 20055 | 13370 | 10028 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 |
| | | | | 1163 | - | 1463 | $v_f$ (in/min) | 59.6 | 59.6 | 99.3 |
| | GRP | 0.80 | 1.00 | | 1425 | | n (rev/min) | 21774 | 14516 | 10887 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 |
| | | | | 1335 | - | 1515 | $v_f$ (in/min) | 64.7 | 64.7 | 107.8 |
| THERMOSET | CFRP | 1.00 | 1.00 | | 1313 | | n (rev/min) | 20055 | 13370 | 10028 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 |
| | | | | 1162.5 | - | 1462.5 | $v_f$ (in/min) | 59.6 | 59.6 | 99.3 |
| | GRP | 0.80 | 1.00 | | 1425 | | n (rev/min) | 21774 | 14516 | 10887 |
| | | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 |
| | | | | 1335 | - | 1515 | $v_f$ (in/min) | 64.7 | 64.7 | 107.8 |

| SIDE MILLING - ROUGHING | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| GRAPHITE | | 2.00 | 0.40 | | 1900 | | n (rev/min) | 29032 | 19355 | 14516 |
| | | | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 119.8 | 119.8 | 199.6 |
| PLASTIC (SOFT) | | 2.00 | 0.40 | | 1900 | | n (rev/min) | 29032 | 19355 | 14516 |
| | | | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 119.8 | 119.8 | 199.6 |
| PLASTIC (HARD) | | 2.00 | 0.40 | | 1900 | | n (rev/min) | 29032 | 19355 | 14516 |
| | | | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 119.8 | 119.8 | 199.6 |
| THERMOPLAST | CFRP | 2.00 | 0.40 | | 1750 | | n (rev/min) | 26740 | 17827 | 13370 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 |
| | | | | 1600 | - | 1900 | $v_f$ (in/min) | 120.3 | 120.3 | 200.6 |
| | GRP | 2.00 | 0.40 | | 1900 | | n (rev/min) | 29032 | 19355 | 14516 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 |
| | | | | 1810 | - | 1990 | $v_f$ (in/min) | 130.6 | 130.6 | 217.7 |
| THERMOSET | CFRP | 2.00 | 0.40 | | 1750 | | n (rev/min) | 26740 | 17827 | 13370 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 |
| | | | | 1600 | - | 1900 | $v_f$ (in/min) | 120.3 | 120.3 | 200.6 |
| | GRP | 2.00 | 0.40 | | 1900 | | n (rev/min) | 29032 | 19355 | 14516 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 |
| | | | | 1810 | - | 1990 | $v_f$ (in/min) | 130.6 | 130.6 | 217.7 |

DIACC - FINE PITCH

| SIDE MILLING - ROUGHING | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 5$ | | $Z_n = 7$ |
| | | | | | | | | 1/4 | 3/8 | 1/2 |
| GRAPHITE | | 2.00 | 0.40 | | 1900 | | n (rev/min) | 29032 | 19355 | 14516 |
| | | | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 199.6 | 199.6 | 279.4 |
| PLASTIC (SOFT) | | 2.00 | 0.40 | | 1900 | | n (rev/min) | 29032 | 19355 | 14516 |
| | | | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 199.6 | 199.6 | 279.4 |
| PLASTIC (HARD) | | 2.00 | 0.40 | | 1900 | | n (rev/min) | 29032 | 19355 | 14516 |
| | | | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 |
| | | | | 1600 | - | 2200 | $v_f$ (in/min) | 199.6 | 199.6 | 279.4 |
| THERMOPLAST | CFRP | 2.00 | 0.40 | | 1750 | | n (rev/min) | 26740 | 17827 | 13370 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 |
| | | | | 1600 | - | 1900 | $v_f$ (in/min) | 200.6 | 200.6 | 280.8 |
| | GRP | 2.00 | 0.40 | | 1900 | | n (rev/min) | 29032 | 19355 | 14516 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 |
| | | | | 1810 | - | 1990 | $v_f$ (in/min) | 217.7 | 217.7 | 304.8 |
| THERMOSET | CFRP | 2.00 | 0.40 | | 1750 | | n (rev/min) | 26740 | 17827 | 13370 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 |
| | | | | 1600 | - | 1900 | $v_f$ (in/min) | 200.6 | 200.6 | 280.8 |
| | GRP | 2.00 | 0.40 | | 1900 | | n (rev/min) | 29032 | 19355 | 14516 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0023 | 0.0030 |
| | | | | 1810 | - | 1990 | $v_f$ (in/min) | 217.7 | 217.7 | 304.8 |

Niagara Cutter

**DIAEPB / DIAPPB / DIABEB COARSE PITCH**

| SLOTTING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 |
| GRAPHITE | | 1.00 | 1.00 | | 1800 | | n (rev/min) | 55008 | 36672 | 27504 | 22003 | 18336 | 13752 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 1600 | - | 2000 | $v_f$ (in/min) | 32.9 | 32.9 | 32.9 | 32.9 | 32.9 | 32.9 |
| PLASTIC (SOFT) | | 1.00 | 1.00 | | 1800 | | n (rev/min) | 55008 | 36672 | 27504 | 22003 | 18336 | 13752 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 1600 | - | 2000 | $v_f$ (in/min) | 32.9 | 32.9 | 32.9 | 32.9 | 32.9 | 32.9 |
| PLASTIC (HARD) | | 1.00 | 1.00 | | 1800 | | n (rev/min) | 55008 | 36672 | 27504 | 22003 | 18336 | 13752 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | | | 1600 | - | 2000 | $v_f$ (in/min) | 32.9 | 32.9 | 32.9 | 32.9 | 32.9 | 32.9 |
| THERMOPLAST | CFRP | 1.00 | 1.00 | | 1800 | | n (rev/min) | 55008 | 36672 | 27504 | 22003 | 18336 | 13752 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0015 | 0.0020 |
| | | | | 1600 | - | 2000 | $v_f$ (in/min) | 27.2 | 27.2 | 27.2 | 27.2 | 27.2 | 27.2 |
| | GRP | 0.80 | 1.00 | | 1800 | | n (rev/min) | 55008 | 36672 | 27504 | 22003 | 18336 | 13752 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0015 | 0.0020 |
| | | | | 1600 | - | 2000 | $v_f$ (in/min) | 27.2 | 27.2 | 27.2 | 27.2 | 27.2 | 27.2 |
| THERMOSET | CFRP | 1.00 | 1.00 | | 1800 | | n (rev/min) | 55008 | 36672 | 27504 | 22003 | 18336 | 13752 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0015 | 0.0020 |
| | | | | 1600 | - | 2000 | $v_f$ (in/min) | 27.2 | 27.2 | 27.2 | 27.2 | 27.2 | 27.2 |
| | GRP | 0.80 | 1.00 | | 1800 | | n (rev/min) | 55008 | 36672 | 27504 | 22003 | 18336 | 13752 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0015 | 0.0020 |
| | | | | 1600 | - | 2000 | $v_f$ (in/min) | 27.2 | 27.2 | 27.2 | 27.2 | 27.2 | 27.2 |

Niagara Cutter

**DIAEPB / DIAPPB / DIABEB COARSE PITCH**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 |
| GRAPHITE | | 2.00 | 0.50 | | 2400 | | n (rev/min) | 73344 | 48896 | 36672 | 29338 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | | | 2200 | - | 2600 | $v_f$ (in/min) | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 |
| PLASTIC (SOFT) | | 2.00 | 0.50 | | 2400 | | n (rev/min) | 73344 | 48896 | 36672 | 29338 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | | | 2200 | - | 2600 | $v_f$ (in/min) | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 |
| PLASTIC (HARD) | | 2.00 | 0.50 | | 2400 | | n (rev/min) | 73344 | 48896 | 36672 | 29338 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | | | 2200 | - | 2600 | $v_f$ (in/min) | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 |
| THERMOPLAST | CFRP | 2.00 | 0.50 | | 2400 | | n (rev/min) | 73344 | 48896 | 36672 | 29338 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 2200 | - | 2600 | $v_f$ (in/min) | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 |
| | GRP | 2.00 | 0.50 | | 2400 | | n (rev/min) | 73344 | 48896 | 36672 | 29338 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 2200 | - | 2600 | $v_f$ (in/min) | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 |
| THERMOSET | CFRP | 2.00 | 0.50 | | 2400 | | n (rev/min) | 73344 | 48896 | 36672 | 29338 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 2200 | - | 2600 | $v_f$ (in/min) | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 |
| | GRP | 2.00 | 0.50 | | 2400 | | n (rev/min) | 73344 | 48896 | 36672 | 29338 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | | | 2200 | - | 2600 | $v_f$ (in/min) | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 |

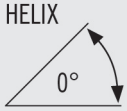
**DIAEPB / DIAPPB / DIABEB FINE PITCH**

| SIDE MILLING - ROUGHING | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SMG | | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | 1/8 | 1/4 | 3/8 | 1/2 |
| GRAPHITE | | 2.00 | 0.25 | | 2400 | | n (rev/min) | 73344 | 36672 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0018 | 0.0027 | 0.0036 |
| | | | | 2100 | - | 2700 | $v_f$ (in/min) | 66.5 | 66.5 | 66.5 | 66.5 |
| PLASTIC (SOFT) | | 2.00 | 0.25 | | 2400 | | n (rev/min) | 73344 | 36672 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0018 | 0.0027 | 0.0036 |
| | | | | 2100 | - | 2700 | $v_f$ (in/min) | 66.5 | 66.5 | 66.5 | 66.5 |
| PLASTIC (HARD) | | 2.00 | 0.25 | | 2400 | | n (rev/min) | 73344 | 36672 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0018 | 0.0027 | 0.0036 |
| | | | | 2100 | - | 2700 | $v_f$ (in/min) | 66.5 | 66.5 | 66.5 | 66.5 |
| THERMOPLAST | CFRP | 2.00 | 0.25 | | 2400 | | n (rev/min) | 73344 | 36672 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0015 | 0.0023 | 0.0030 |
| | | | | 2250 | - | 2550 | $v_f$ (in/min) | 55.0 | 55.0 | 55.0 | 55.0 |
| | GRP | 2.00 | 0.25 | | 2400 | | n (rev/min) | 73344 | 36672 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0015 | 0.0023 | 0.0030 |
| | | | | 2310 | - | 2490 | $v_f$ (in/min) | 55.0 | 55.0 | 55.0 | 55.0 |
| THERMOSET | CFRP | 2.00 | 0.25 | | 2400 | | n (rev/min) | 73344 | 36672 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0015 | 0.0023 | 0.0030 |
| | | | | 2250 | - | 2550 | $v_f$ (in/min) | 55.0 | 55.0 | 55.0 | 55.0 |
| | GRP | 2.00 | 0.25 | | 2400 | | n (rev/min) | 73344 | 36672 | 24448 | 18336 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0015 | 0.0023 | 0.0030 |
| | | | | 2310 | - | 2490 | $v_f$ (in/min) | 55.0 | 55.0 | 55.0 | 55.0 |

## CHAMFER- CM260

SOLID CARBIDE

HELIX




CHAMFER

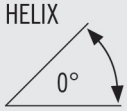
CENTER CUTTING

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N76590 | CM260-0.250-D1-C.0-Z2 | 1/4 | 1/4 | 3/16 | 2-1/2 | 2 | TiAlN | 60 |
| N76591 | CM260-0.375-D1-C.0-Z2 | 3/8 | 3/8 | 5/16 | 2-1/2 | 2 | TiAlN | 60 |
| N76592 | CM260-0.500-D1-C.0-Z2 | 1/2 | 1/2 | 7/16 | 3 | 2 | TiAlN | 60 |

## CHAMFER- CM290

SOLID CARBIDE

HELIX




CHAMFER

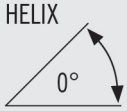
CENTER CUTTING

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N76593 | CM290-0.250-D1-C.0-Z2 | 1/4 | 1/4 | 1/8 | 2-1/2 | 2 | TiAlN | 90 |
| N76594 | CM290-0.375-D1-C.0-Z2 | 3/8 | 3/8 | 3/16 | 2-1/2 | 2 | TiAlN | 90 |
| N76595 | CM290-0.500-D1-C.0-Z2 | 1/2 | 1/2 | 1/4 | 3 | 2 | TiAlN | 90 |

## CHAMFER- CM460

SOLID CARBIDE

HELIX




CHAMFER

60°

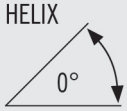
CENTER CUTTING

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N76596 | CM460-0.250-D1-C.0-Z4 | 1/4 | 1/4 | 3/16 | 2-1/2 | 4 | TiAlN | 60 |
| N76597 | CM460-0.375-D1-C.0-Z4 | 3/8 | 3/8 | 5/16 | 2-1/2 | 4 | TiAlN | 60 |
| N76598 | CM460-0.500-D1-C.0-Z4 | 1/2 | 1/2 | 7/16 | 3 | 4 | TiAlN | 60 |
| N76599 | CM460-0.750-D1-C.0-Z4 | 3/4 | 3/4 | 5/8 | 3 | 4 | TiAlN | 60 |

## CHAMFER- CM490

SOLID CARBIDE

HELIX




CHAMFER

90°

CENTER CUTTING

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N76600 | CM490-0.250-D1-C.0-Z4 | 1/4 | 1/4 | 1/8 | 2-1/2 | 4 | TiAlN | 90 |
| N76601 | CM490-0.375-D1-C.0-Z4 | 3/8 | 3/8 | 3/16 | 2-1/2 | 4 | TiAlN | 90 |
| N76602 | CM490-0.500-D1-C.0-Z4 | 1/2 | 1/2 | 1/4 | 3 | 4 | TiAlN | 90 |
| N76603 | CM490-0.750-D1-C.0-Z4 | 3/4 | 3/4 | 3/8 | 3 | 4 | TiAlN | 90 |

Niagara Cutter

**CM260 / CM290**

| SLOTTING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 2$ 1/4 | 3/8 | 1/2 | 5/8 | 3/4 |
| P | E 1 - 2 | 0.30 | 1.00 | | 400 | | n (rev/min) | 6112 | 4075 | 3056 | 2445 | 2037 |
| | | | | | | | $f_z$ (in) | 0.00050 | 0.00075 | 0.00100 | 0.00125 | 0.00150 |
| | | | | 340 | - | 460 | $v_f$ (in/min) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
| | E 3 - 4 | 0.20 | 1.00 | | 200 | | n (rev/min) | 3056 | 2037 | 1528 | 1222 | 1019 |
| | | | | | | | $f_z$ (in) | 0.00028 | 0.00042 | 0.00056 | 0.00070 | 0.00084 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| | E 5 - 6 | 0.20 | 1.00 | | 100 | | n (rev/min) | 1528 | 1019 | 764 | 611 | 509 |
| | | | | | | | $f_z$ (in) | 0.00240 | 0.00360 | 0.00480 | 0.00600 | 0.00720 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 |
| H | M / A / D 7a (48>52HRc) | 0.20 | 1.00 | | 70 | | n (rev/min) | 1070 | 713 | 535 | 428 | 357 |
| | | | | | | | $f_z$ (in) | 0.00016 | 0.00024 | 0.00032 | 0.00040 | 0.00048 |
| | | | | 55 | - | 85 | $v_f$ (in/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| M | E 8 - 9 | 0.50 | 1.00 | | 320 | | n (rev/min) | 4890 | 3260 | 2445 | 1956 | 1630 |
| | | | | | | | $f_z$ (in) | 0.00024 | 0.00036 | 0.00048 | 0.00060 | 0.00072 |
| | | | | 290 | - | 350 | $v_f$ (in/min) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| | E 10 - 11 | 0.30 | 1.00 | | 250 | | n (rev/min) | 3820 | 2547 | 1910 | 1528 | 1273 |
| | | | | | | | $f_z$ (in) | 0.00020 | 0.00030 | 0.00040 | 0.00050 | 0.00060 |
| | | | | 220 | - | 280 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| K | E 12 - 13 | 0.30 | 1.00 | | 270 | | n (rev/min) | 4126 | 2750 | 2063 | 1650 | 1375 |
| | | | | | | | $f_z$ (in) | 0.00058 | 0.00087 | 0.00116 | 0.00145 | 0.00174 |
| | | | | 210 | - | 330 | $v_f$ (in/min) | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |
| | E 14 - 15 | 0.20 | 1.00 | | 145 | | n (rev/min) | 2216 | 1477 | 1108 | 886 | 739 |
| | | | | | | | $f_z$ (in) | 0.00034 | 0.00051 | 0.00068 | 0.00085 | 0.00102 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**CM260 / CM290**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 2$ | | | | |
| | | | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 |
| P | E 1 - 2 | 1.00 | 0.50 | | 400 | | n (rev/min) | 6112 | 4075 | 3056 | 2445 | 2037 |
| | | | | | | | $f_z$ (in) | 0.00063 | 0.00094 | 0.00125 | 0.00156 | 0.00188 |
| | | | | 340 | - | 460 | $v_f$ (in/min) | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 |
| | E 3 - 4 | 1.00 | 0.50 | | 200 | | n (rev/min) | 3056 | 2037 | 1528 | 1222 | 1019 |
| | | | | | | | $f_z$ (in) | 0.00035 | 0.00053 | 0.00070 | 0.00088 | 0.00105 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| | E 5 - 6 | 1.00 | 0.50 | | 100 | | n (rev/min) | 1528 | 1019 | 764 | 611 | 509 |
| | | | | | | | $f_z$ (in) | 0.00030 | 0.00045 | 0.00060 | 0.00075 | 0.00090 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| H | M / A / D 7a (48>52HRc) | 0.30 | 0.20 | | 70 | | n (rev/min) | 1070 | 713 | 535 | 428 | 357 |
| | | | | | | | $f_z$ (in) | 0.00020 | 0.00030 | 0.00040 | 0.00050 | 0.00060 |
| | | | | 55 | - | 85 | $v_f$ (in/min) | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| M | E 8 - 9 | 1.00 | 0.50 | | 320 | | n (rev/min) | 4890 | 3260 | 2445 | 1956 | 1630 |
| | | | | | | | $f_z$ (in) | 0.00030 | 0.00045 | 0.00060 | 0.00075 | 0.00090 |
| | | | | 290 | - | 350 | $v_f$ (in/min) | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 |
| | E 10 - 11 | 1.00 | 0.50 | | 250 | | n (rev/min) | 3820 | 2547 | 1910 | 1528 | 1273 |
| | | | | | | | $f_z$ (in) | 0.00025 | 0.00038 | 0.00050 | 0.00063 | 0.00075 |
| | | | | 220 | - | 280 | $v_f$ (in/min) | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| K | E 12 - 13 | 1.00 | 0.50 | | 270 | | n (rev/min) | 4126 | 2750 | 2063 | 1650 | 1375 |
| | | | | | | | $f_z$ (in) | 0.00073 | 0.00109 | 0.00145 | 0.00181 | 0.00218 |
| | | | | 210 | - | 330 | $v_f$ (in/min) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| | E 14 - 15 | 1.00 | 0.50 | | 145 | | n (rev/min) | 2216 | 1477 | 1108 | 886 | 739 |
| | | | | | | | $f_z$ (in) | 0.00043 | 0.00064 | 0.00085 | 0.00106 | 0.00128 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**CM460 / CM490**

| SLOTTING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (sf / min) | | | $Z_n = 4$ 1/4 | 3/8 | 1/2 | 5/8 | 3/4 |
| P | E 1 - 2 | 0.30 | 1.00 | | 400 | | n (rev/min) | 6112 | 4075 | 3056 | 2445 | 2037 |
| | | | | | | | $f_z$ (in) | 0.00050 | 0.00075 | 0.00100 | 0.00125 | 0.00150 |
| | | | | 340 | - | 460 | $v_f$ (in/min) | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 |
| | E 3 - 4 | 0.20 | 1.00 | | 200 | | n (rev/min) | 3056 | 2037 | 1528 | 1222 | 1019 |
| | | | | | | | $f_z$ (in) | 0.00028 | 0.00042 | 0.00056 | 0.00070 | 0.00084 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| | E 5 - 6 | 0.20 | 1.00 | | 100 | | n (rev/min) | 1528 | 1019 | 764 | 611 | 509 |
| | | | | | | | $f_z$ (in) | 0.00240 | 0.00360 | 0.00480 | 0.00600 | 0.00720 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 |
| H | M / A / D 7a (48>52HRc) | 0.20 | 1.00 | | 70 | | n (rev/min) | 1070 | 713 | 535 | 428 | 357 |
| | | | | | | | $f_z$ (in) | 0.00016 | 0.00024 | 0.00032 | 0.00040 | 0.00048 |
| | | | | 55 | - | 85 | $v_f$ (in/min) | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| M | E 8 - 9 | 0.50 | 1.00 | | 320 | | n (rev/min) | 4890 | 3260 | 2445 | 1956 | 1630 |
| | | | | | | | $f_z$ (in) | 0.00024 | 0.00036 | 0.00048 | 0.00060 | 0.00072 |
| | | | | 290 | - | 350 | $v_f$ (in/min) | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 |
| | E 10 - 11 | 0.30 | 1.00 | | 250 | | n (rev/min) | 3820 | 2547 | 1910 | 1528 | 1273 |
| | | | | | | | $f_z$ (in) | 0.00020 | 0.00030 | 0.00040 | 0.00050 | 0.00060 |
| | | | | 220 | - | 280 | $v_f$ (in/min) | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
| K | E 12 - 13 | 0.30 | 1.00 | | 270 | | n (rev/min) | 4126 | 2750 | 2063 | 1650 | 1375 |
| | | | | | | | $f_z$ (in) | 0.00058 | 0.00087 | 0.00116 | 0.00145 | 0.00174 |
| | | | | 210 | - | 330 | $v_f$ (in/min) | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 |
| | E 14 - 15 | 0.20 | 1.00 | | 145 | | n (rev/min) | 2216 | 1477 | 1108 | 886 | 739 |
| | | | | | | | $f_z$ (in) | 0.00034 | 0.00051 | 0.00068 | 0.00085 | 0.00102 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**CM460 / CM490**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | | |
| | | | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 |
| P | E 1 - 2 | 1.00 | 0.50 | | 400 | | n (rev/min) | 6112 | 4075 | 3056 | 2445 | 2037 |
| | | | | | | | $f_z$ (in) | 0.00063 | 0.00094 | 0.00125 | 0.00156 | 0.00188 |
| | | | | 340 | - | 460 | $v_f$ (in/min) | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |
| | E 3 - 4 | 1.00 | 0.50 | | 200 | | n (rev/min) | 3056 | 2037 | 1528 | 1222 | 1019 |
| | | | | | | | $f_z$ (in) | 0.00035 | 0.00053 | 0.00070 | 0.00088 | 0.00105 |
| | | | | 140 | - | 260 | $v_f$ (in/min) | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 |
| | E 5 - 6 | 1.00 | 0.50 | | 100 | | n (rev/min) | 1528 | 1019 | 764 | 611 | 509 |
| | | | | | | | $f_z$ (in) | 0.00030 | 0.00045 | 0.00060 | 0.00075 | 0.00090 |
| | | | | 40 | - | 160 | $v_f$ (in/min) | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| H | M / A / D 7a (48>52HRc) | 0.30 | 0.20 | | 70 | | n (rev/min) | 1070 | 713 | 535 | 428 | 357 |
| | | | | | | | $f_z$ (in) | 0.00020 | 0.00030 | 0.00040 | 0.00050 | 0.00060 |
| | | | | 55 | - | 85 | $v_f$ (in/min) | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| M | E 8 - 9 | 1.00 | 0.50 | | 320 | | n (rev/min) | 4890 | 3260 | 2445 | 1956 | 1630 |
| | | | | | | | $f_z$ (in) | 0.00030 | 0.00045 | 0.00060 | 0.00075 | 0.00090 |
| | | | | 290 | - | 350 | $v_f$ (in/min) | 5.9 | 5.9 | 5.9 | 5.9 | 5.9 |
| | E 10 - 11 | 1.00 | 0.50 | | 250 | | n (rev/min) | 3820 | 2547 | 1910 | 1528 | 1273 |
| | | | | | | | $f_z$ (in) | 0.00025 | 0.00038 | 0.00050 | 0.00063 | 0.00075 |
| | | | | 220 | - | 280 | $v_f$ (in/min) | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| K | E 12 - 13 | 1.00 | 0.50 | | 270 | | n (rev/min) | 4126 | 2750 | 2063 | 1650 | 1375 |
| | | | | | | | $f_z$ (in) | 0.00073 | 0.00109 | 0.00145 | 0.00181 | 0.00218 |
| | | | | 210 | - | 330 | $v_f$ (in/min) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| | E 14 - 15 | 1.00 | 0.50 | | 145 | | n (rev/min) | 2216 | 1477 | 1108 | 886 | 739 |
| | | | | | | | $f_z$ (in) | 0.00043 | 0.00064 | 0.00085 | 0.00106 | 0.00128 |
| | | | | 85 | - | 205 | $v_f$ (in/min) | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |

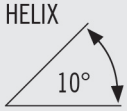
A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

# MOLD AND DIE- MZN410R / MZN510R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

HIGH FEED

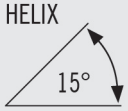
- High wear resistant AlTiN coating
- Strong end tooth design
- Designed for high feed milling of hardened steels and nickel based super alloys such as Inconel
- Edge preparation for increased cutting edge strength 2° back taper with reduced neck diameter for workpiece clearance

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS | REACH | NECK DIA |
|---|---|---|---|---|---|---|---|---|---|---|
| N00305 | MZN410R-0.125-J1-R030.0-Z4 | 1/8 | 1/4 | 1/8 | 2-1/2 | 4 | AlTiN | 0.030 | 0.375 | 0.112 |
| N00001 | MZN410R-0.125-J2-R030.0-Z4 | 1/8 | 1/4 | 1/8 | 2-1/2 | 4 | AlTiN | 0.030 | 0.625 | 0.112 |
| N00002 | MZN410R-0.188-J1-R050.0-Z4 | 3/16 | 1/4 | 3/16 | 2-1/2 | 4 | AlTiN | 0.050 | 0.562 | 0.172 |
| N00003 | MZN410R-0.188-J2-R050.0-Z4 | 3/16 | 1/4 | 3/16 | 2-1/2 | 4 | AlTiN | 0.050 | 0.937 | 0.172 |
| N00004 | MZN410R-0.250-E1-R060.0-Z4 | 1/4 | 1/4 | 1/4 | 2-1/2 | 4 | AlTiN | 0.060 | 0.750 | 0.230 |
| N00005 | MZN410R-0.250-E2-R060.0-Z4 | 1/4 | 1/4 | 1/4 | 2-1/2 | 4 | AlTiN | 0.060 | 1.250 | 0.230 |
| N00006 | MZN410R-0.313-G1-R080.0-Z4 | 5/16 | 3/8 | 5/16 | 3 | 4 | AlTiN | 0.080 | 0.750 | 0.290 |
| N00007 | MZN410R-0.313-G2-R080.0-Z4 | 5/16 | 3/8 | 5/16 | 3 | 4 | AlTiN | 0.080 | 1.250 | 0.290 |
| N00008 | MZN410R-0.375-E1-R080.0-Z4 | 3/8 | 3/8 | 3/8 | 3 | 4 | AlTiN | 0.080 | 1.125 | 0.348 |
| N00009 | MZN510R-0.375-E2-R080.0-Z5 | 3/8 | 3/8 | 3/8 | 3 | 5 | AlTiN | 0.080 | 1.125 | 0.348 |
| N00010 | MZN410R-0.375-E3-R080.0-Z4 | 3/8 | 3/8 | 3/8 | 3 | 4 | AlTiN | 0.080 | 1.875 | 0.348 |
| N00011 | MZN410R-0.500-E1-R120.0-Z4 | 1/2 | 1/2 | 1/2 | 4 | 4 | AlTiN | 0.120 | 1.500 | 0.468 |
| N00012 | MZN510R-0.500-E2-R120.0-Z5 | 1/2 | 1/2 | 1/2 | 4 | 5 | AlTiN | 0.120 | 1.500 | 0.468 |
| N00013 | MZN510R-0.625-E1-R120.0-Z5 | 5/8 | 5/8 | 5/8 | 4 | 5 | AlTiN | 0.120 | 1.875 | 0.584 |

# MOLD AND DIE- MB215

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

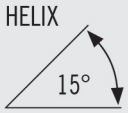
- 7° Draft Angle
- Ideal for milling hardened mold and die steels up to 52HRc
- Rough and finish milling of contours and complex shapes

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N76671 | MB215-0.063-G1-B.0-Z2 | 1/16 | 1/4 | 1/16 | 2-1/2 | 2 | AlTiN |
| N76673 | MB215-0.125-G1-B.0-Z2 | 1/8 | 1/4 | 1/8 | 3 | 2 | AlTiN |
| N76675 | MB215-0.250-E1-B.0-Z2 | 1/4 | 1/4 | 1/4 | 3 | 2 | AlTiN |
| N76677 | MB215-0.375-E1-B.0-Z2 | 3/8 | 3/8 | 3/8 | 3 | 2 | AlTiN |
| N76679 | MB215-0.500-E1-B.0-Z2 | 1/2 | 1/2 | 1/2 | 4 | 2 | AlTiN |

# METRIC MOLD AND DIE- MB215M

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

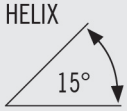
- 7° Draft Angle
- Ideal for milling hardened mold and die steels up to 52HRc
- Rough and finish milling of contours and complex shapes

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | NECK DIA | NECK LENGTH |
|---|---|---|---|---|---|---|---|---|---|
| N76660 | MB215M-010-G1-B.0-Z2 | 1mm | 6mm | 1mm | 64mm | 2 | AlTiN | 0.9mm | 1mm |
| N76661 | MB215M-020-G1-B.0-Z2 | 2mm | 6mm | 2mm | 64mm | 2 | AlTiN | 1.9mm | 2mm |
| N76662 | MB215M-030-G1-B.0-Z2 | 3mm | 6mm | 3mm | 64mm | 2 | AlTiN | 2.9mm | 3mm |
| N76663 | MB215M-040-G1-B.0-Z2 | 4mm | 6mm | 4mm | 64mm | 2 | AlTiN | 3.9mm | 4mm |
| N76665 | MB215M-060-E1-B.0-Z2 | 6mm | 6mm | 6mm | 64mm | 2 | AlTiN | 5.9mm | 6mm |
| N76666 | MB215M-080-E1-B.0-Z2 | 8mm | 8mm | 8mm | 80mm | 2 | AlTiN | 7.8mm | 8mm |
| N76667 | MB215M-100-E1-B.0-Z2 | 10mm | 10mm | 10mm | 82mm | 2 | AlTiN | 9.8mm | 10mm |
| N76668 | MB215M-120-E1-B.0-Z2 | 12mm | 12mm | 12mm | 100mm | 2 | AlTiN | 11.8mm | 12mm |

# MOLD AND DIE- MBZ215

SOLID CARBIDE

HELIX




BALL END

CENTER CUTTING

- 7° Draft Angle
- Ideal for milling hardened mold and die steels up to 62HRc
- Rough and finish milling of contours and complex shapes

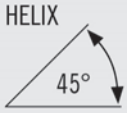
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | NECK DIA | NECK LENGTH |
|---|---|---|---|---|---|---|---|---|---|
| N76691 | MBZ215-0.063-G1-B.0-Z2 | 1/16 | 1/4 | 1/16 | 2-1/2 | 2 | AlTiN | 0.059 | 1/16 |
| N76693 | MBZ215-0.125-G1-B.0-Z2 | 1/8 | 1/4 | 1/8 | 3 | 2 | AlTiN | 0.121 | 1/8 |
| N76695 | MBZ215-0.250-E1-B.0-Z2 | 1/4 | 1/4 | 1/4 | 3 | 2 | AlTiN | 0.246 | 1/4 |
| N76697 | MBZ215-0.375-E1-B.0-Z2 | 3/8 | 3/8 | 3/8 | 3 | 2 | AlTiN | 0.367 | 3/8 |
| N76699 | MBZ215-0.500-E1-B.0-Z2 | 1/2 | 1/2 | 1/2 | 4 | 2 | AlTiN | 0.492 | 1/2 |

Niagara Cutter

# MOLD AND DIE- MZ645

SOLID CARBIDE

HELIX




SQUARE END

CENTER CUTTING

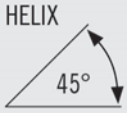
- Ideal for peripheral milling of hard steels up to 62HRc

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N76617 | MZ645-0.125-F3-S.0-Z6 | 1/8 | 1/4 | 3/8 | 3 | 6 | AlTiN |
| N76619 | MZ645-0.188-F3-S.0-Z6 | 3/16 | 1/4 | 1/2 | 3 | 6 | AlTiN |
| N76621 | MZ645-0.250-D3-S.0-Z6 | 1/4 | 1/4 | 5/8 | 3 | 6 | AlTiN |
| N76623 | MZ645-0.313-D2-S.0-Z6 | 5/16 | 5/16 | 3/4 | 3 | 6 | AlTiN |
| N76625 | MZ645-0.375-D3-S.0-Z6 | 3/8 | 3/8 | 1 | 3 | 6 | AlTiN |
| N76627 | MZ645-0.500-D2-S.0-Z6 | 1/2 | 1/2 | 1-1/8 | 4 | 6 | AlTiN |

# MOLD AND DIE- MZ645R

SOLID CARBIDE

HELIX




RADIUS

CENTER CUTTING

- Ideal for peripheral milling of hard steels up to 62HRc

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | RADIUS |
|---|---|---|---|---|---|---|---|---|
| N76616 | MZ645R-0.125-F3-R020.0-Z6 | 1/8 | 1/4 | 3/8 | 3 | 6 | AlTiN | 0.020 |
| N76618 | MZ645R-0.188-F3-R020.0-Z6 | 3/16 | 1/4 | 1/2 | 3 | 6 | AlTiN | 0.020 |
| N76620 | MZ645R-0.250-D3-R020.0-Z6 | 1/4 | 1/4 | 5/8 | 3 | 6 | AlTiN | 0.020 |
| N76622 | MZ645R-0.313-D2-R020.0-Z6 | 5/16 | 5/16 | 3/4 | 3 | 6 | AlTiN | 0.020 |
| N76624 | MZ645R-0.375-D3-R020.0-Z6 | 3/8 | 3/8 | 1 | 3 | 6 | AlTiN | 0.020 |
| N76626 | MZ645R-0.500-D2-R030.0-Z6 | 1/2 | 1/2 | 1-1/8 | 4 | 6 | AlTiN | 0.030 |

Niagara Cutter

**MZN410R / MZN510R**

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_e$ x $Dc^2$ | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | | | $Z_n = 5$ | | |
| | | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 1/2 | 5/8 |
| P | E / M / A 5 - 6 | 1.00 | | 740 | | n (rev/min) | 22614 | 15076 | 11967 | 9046 | 7538 | 5654 | 4523 | 5654 | 4523 |
| | | | | | | $f_z$(in) | 0.0031 | 0.0047 | 0.0059 | 0.0078 | 0.0094 | 0.0125 | 0.0156 | 0.0125 | 0.0156 |
| | | | 690 | - | 790 | $v_f$ (in/min) | 283 | 283 | 283 | 283 | 283 | 283 | 283 | 353 | 353 |
| | | | | | | max ($a_p$) | 0.0059 | 0.0079 | 0.0098 | 0.0138 | 0.0157 | 0.0177 | 0.0197 | 0.0217 | 0.0217 |
| H | M / A / D 7a | 1.00 | | 440 | | n (rev/min) | 13446 | 8964 | 7115 | 5379 | 4482 | 3362 | 2689 | 3362 | 2689 |
| | | | | | | $f_z$(in) | 0.0031 | 0.0047 | 0.0059 | 0.0078 | 0.0094 | 0.0125 | 0.0156 | 0.0125 | 0.0156 |
| | | | 390 | - | 490 | $v_f$ (in/min) | 168 | 168 | 168 | 168 | 168 | 168 | 168 | 210 | 210 |
| | | | | | | max ($a_p$) | 0.0059 | 0.0079 | 0.0098 | 0.0138 | 0.0157 | 0.0177 | 0.0197 | 0.0217 | 0.0217 |
| | M / A / D 7b | 1.00 | | 230 | | n (rev/min) | 7029 | 4686 | 3719 | 2812 | 2343 | 1757 | 1406 | 1757 | 1406 |
| | | | | | | $f_z$(in) | 0.0025 | 0.0038 | 0.0047 | 0.0063 | 0.0075 | 0.0100 | 0.0125 | 0.0100 | 0.0125 |
| | | | 200 | - | 260 | $v_f$ (in/min) | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 88 | 88 |
| | | | | | | max ($a_p$) | 0.0030 | 0.0039 | 0.0049 | 0.0069 | 0.0079 | 0.0089 | 0.0098 | 0.0108 | 0.0108 |
| K | E / M / A 12 - 13 | 1.00 | | 570 | | n (rev/min) | 17419 | 11610 | 9220 | 6970 | 5810 | 4350 | 3480 | 4350 | 3480 |
| | | | | | | $f_z$(in) | 0.0030 | 0.0045 | 0.0057 | 0.0075 | 0.0090 | 0.0120 | 0.0150 | 0.0120 | 0.0150 |
| | | | 490 | - | 660 | $v_f$ (in/min) | 209 | 209 | 209 | 209 | 209 | 209 | 209 | 261 | 261 |
| | | | | | | max ($a_p$) | 0.0059 | 0.0079 | 0.0098 | 0.0138 | 0.0157 | 0.0177 | 0.0197 | 0.0217 | 0.0217 |
| | E / M / A 14 - 15 | 1.00 | | 410 | | n (rev/min) | 12530 | 8353 | 6630 | 5012 | 4177 | 3132 | 2506 | 3132 | 2506 |
| | | | | | | $f_z$(in) | 0.0023 | 0.0034 | 0.0043 | 0.0056 | 0.0068 | 0.0090 | 0.0113 | 0.0090 | 0.0113 |
| | | | 330 | - | 490 | $v_f$ (in/min) | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 141 | 141 |
| | | | | | | max ($a_p$) | 0.0059 | 0.0079 | 0.0098 | 0.0138 | 0.0157 | 0.0177 | 0.0197 | 0.0217 | 0.0217 |
| S | E 21 | 1.00 | | 100 | | n (rev/min) | 3056 | 2037 | 1617 | 1222 | 1019 | 764 | 611 | 764 | 611 |
| | | | | | | $f_z$(in) | 0.0017 | 0.0026 | 0.0033 | 0.0042 | 0.0051 | 0.0070 | 0.0087 | 0.0070 | 0.0087 |
| | | | 90 | - | 110 | $v_f$ (in/min) | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 27 | 27 |
| | | | | | | max ($a_p$) | 0.0038 | 0.0050 | 0.0070 | 0.0077 | 0.0100 | 0.0150 | 0.0150 | 0.0150 | 0.0150 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**MZN410R / MZN510R**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_e$ x $Dc^2$ | $v_c$ (sf / min) | | $Z_n = 4$ | | | | | | | $Z_n = 5$ | | |
| | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 1/2 | 5/8 |
| P | E / M / A 5 - 6 | 0.30 | 740 | n (rev/min) | 22614 | 15076 | 11967 | 9046 | 7538 | 5654 | 4523 | 5654 | 4523 |
| | | | | $f_z$(in) | 0.0050 | 0.0075 | 0.0094 | 0.0125 | 0.0150 | 0.0200 | 0.0250 | 0.0200 | 0.0250 |
| | | | 690 790 | $v_f$ (in/min) | 452 | 452 | 452 | 452 | 452 | 452 | 452 | 565 | 565 |
| | | | | max ($a_p$) | 0.0047 | 0.0063 | 0.0079 | 0.0110 | 0.0126 | 0.0142 | 0.0157 | 0.0173 | 0.0173 |
| H | M / A / D 7a | 0.30 | 480 | n (rev/min) | 14669 | 9779 | 7762 | 5868 | 4890 | 3667 | 2934 | 3667 | 2934 |
| | | | | $f_z$(in) | 0.0050 | 0.0075 | 0.0094 | 0.0125 | 0.0150 | 0.0200 | 0.0250 | 0.0200 | 0.0250 |
| | | | 430 520 | $v_f$ (in/min) | 293 | 293 | 293 | 293 | 293 | 293 | 293 | 367 | 367 |
| | | | | max ($a_p$) | 0.0047 | 0.0063 | 0.0079 | 0.0110 | 0.0126 | 0.0142 | 0.0157 | 0.0173 | 0.0173 |
| | M / A / D 7b | 0.30 | 260 | n (rev/min) | 7946 | 5297 | 4205 | 3178 | 2649 | 1986 | 1589 | 1986 | 1589 |
| | | | | $f_z$(in) | 0.0038 | 0.0056 | 0.0071 | 0.0094 | 0.0113 | 0.0150 | 0.0188 | 0.0150 | 0.0188 |
| | | | 230 300 | $v_f$ (in/min) | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 149 | 149 |
| | | | | max ($a_p$) | 0.0047 | 0.0063 | 0.0079 | 0.0110 | 0.0126 | 0.0142 | 0.0157 | 0.0173 | 0.0173 |
| K | E / M / A 12 - 13 | 0.30 | 570 | n (rev/min) | 17419 | 11613 | 9218 | 6968 | 5806 | 4355 | 3484 | 4355 | 3484 |
| | | | | $f_z$(in) | 0.0050 | 0.0075 | 0.0094 | 0.0125 | 0.0150 | 0.0200 | 0.0250 | 0.0200 | 0.0250 |
| | | | 490 660 | $v_f$ (in/min) | 348 | 348 | 348 | 348 | 348 | 348 | 348 | 435 | 435 |
| | | | | max ($a_p$) | 0.0059 | 0.0079 | 0.0098 | 0.0138 | 0.0157 | 0.0177 | 0.0197 | 0.0217 | 0.0217 |
| | E / M / A 14 - 15 | 0.30 | 410 | n (rev/min) | 12530 | 8353 | 6630 | 5012 | 4177 | 3132 | 2506 | 3132 | 2506 |
| | | | | $f_z$(in) | 0.0038 | 0.0056 | 0.0071 | 0.0094 | 0.0113 | 0.0150 | 0.0188 | 0.0150 | 0.0188 |
| | | | 330 490 | $v_f$ (in/min) | 188 | 188 | 188 | 188 | 188 | 188 | 188 | 235 | 235 |
| | | | | max ($a_p$) | 0.0059 | 0.0079 | 0.0098 | 0.0138 | 0.0157 | 0.0177 | 0.0197 | 0.0217 | 0.0217 |
| S | E 21 | 0.30 | 100 | n (rev/min) | 3056 | 2037 | 1617 | 1222 | 1019 | 764 | 611 | 764 | 611 |
| | | | | $f_z$(in) | 0.0026 | 0.0039 | 0.0049 | 0.0065 | 0.0078 | 0.0105 | 0.0130 | 0.0105 | 0.0130 |
| | | | 90 110 | $v_f$ (in/min) | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 40 | 40 |
| | | | | max ($a_p$) | 0.0038 | 0.0050 | 0.0070 | 0.0077 | 0.0100 | 0.0150 | 0.0150 | 0.0150 | 0.0150 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**MB215**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 2$ | | | | | | | | | | | | |
| | | | | | | 1/32 | 1/16 | 3/32 | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 5 - 6 | 0.10 | 0.30 | 500 | n (rev/min) | 61120 | 30560 | 20373 | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | | | $f_z$ (in) | 0.00030 | 0.00059 | 0.00089 | 0.00119 | 0.00178 | 0.00238 | 0.00297 | 0.00356 | 0.00475 | 0.00594 | 0.00713 | 0.00950 |
| | | | | 470 - 530 | $v_f$ (in/min) | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 |
| H | M / A / D 7a (48>52HRc) | 0.05 | 0.20 | 450 | n (rev/min) | 55008 | 27504 | 18336 | 13752 | 9168 | 6876 | 5501 | 4584 | 3438 | 2750 | 2292 | 1719 |
| | | | | | $f_z$ (in) | 0.00027 | 0.00054 | 0.00081 | 0.00108 | 0.00161 | 0.00215 | 0.00269 | 0.00323 | 0.00430 | 0.00538 | 0.00645 | 0.00860 |
| | | | | 420 - 480 | $v_f$ (in/min) | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 |

| SIDE MILLING - FINISHING | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 5 - 6 | 0.10 | 0.15 | 500 | n (rev/min) | 61120 | 30560 | 20373 | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | | | $f_z$ (in) | 0.00030 | 0.00059 | 0.00089 | 0.00119 | 0.00178 | 0.00238 | 0.00297 | 0.00356 | 0.00475 | 0.00594 | 0.00713 | 0.00950 |
| | | | | 470 - 530 | $v_f$ (in/min) | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 |
| K | M / A / D 7a (48>52HRc) | 0.05 | 0.10 | 450 | n (rev/min) | 55008 | 27504 | 18336 | 13752 | 9168 | 6876 | 5501 | 4584 | 3438 | 2750 | 2292 | 1719 |
| | | | | | $f_z$ (in) | 0.00027 | 0.00054 | 0.00081 | 0.00108 | 0.00161 | 0.00215 | 0.00269 | 0.00323 | 0.00430 | 0.00538 | 0.00645 | 0.00860 |
| | | | | 420 - 480 | $v_f$ (in/min) | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 |

**MB215M**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 2$ | | | | | | | | | | | |
| | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 16 | | |
| P | E 5 - 6 | 0.10 | 0.30 | 152 | n (rev/min) | 48380 | 24190 | 16130 | 12100 | 9680 | 8060 | 6050 | 4840 | 4030 | 3020 | | |
| | | | | | $f_z$ (mm) | 0.010 | 0.019 | 0.029 | 0.038 | 0.048 | 0.057 | 0.076 | 0.095 | 0.114 | 0.152 | | |
| | | | | 143 - 162 | $v_f$ (mm/min) | 919 | 919 | 919 | 920 | 920 | 919 | 920 | 920 | 919 | 918 | | |
| H | M / A / D 7a (48>52HRc) | 0.05 | 0.20 | 137 | n (rev/min) | 43610 | 21800 | 14540 | 10900 | 8720 | 7270 | 5450 | 4360 | 3630 | 2730 | | |
| | | | | | $f_z$ (mm) | 0.009 | 0.017 | 0.026 | 0.034 | 0.043 | 0.052 | 0.069 | 0.086 | 0.103 | 0.138 | | |
| | | | | 128 - 146 | $v_f$ (mm/min) | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 749 | 751 | | |

| SIDE MILLING - FINISHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 5 - 6 | 0.10 | 0.15 | 152 | n (rev/min) | 48380 | 24190 | 16130 | 12100 | 9680 | 8060 | 6050 | 4840 | 4030 | 3020 |
| | | | | | $f_z$ (mm) | 0.010 | 0.019 | 0.029 | 0.038 | 0.048 | 0.057 | 0.076 | 0.095 | 0.114 | 0.152 |
| | | | | 143 - 162 | $v_f$ (mm/min) | 919 | 919 | 919 | 920 | 920 | 919 | 920 | 920 | 919 | 918 |
| H | M / A / D 7a (48>52HRc) | 0.05 | 0.10 | 137 | n (rev/min) | 43610 | 21800 | 14540 | 10900 | 8720 | 7270 | 5450 | 4360 | 3630 | 2730 |
| | | | | | $f_z$ (mm) | 0.009 | 0.017 | 0.026 | 0.034 | 0.043 | 0.052 | 0.069 | 0.086 | 0.103 | 0.138 |
| | | | | 128 - 146 | $v_f$ (mm/min) | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 749 | 751 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**MBZ215**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 2$ | | | | | | | | | | | | |
| | | | | | | 1/32 | 1/16 | 3/32 | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 5 - 6 | 0.10 | 0.30 | 500 | n (rev/min) | 61120 | 30560 | 20373 | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | | | $f_z$ (in) | 0.00030 | 0.00059 | 0.00089 | 0.00119 | 0.00178 | 0.00238 | 0.00297 | 0.00356 | 0.00475 | 0.00594 | 0.00713 | 0.00950 |
| | | | | 440 - 560 | $v_f$ (in/min) | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 |
| H | M / A / D 7a (48>52HRc) | 0.05 | 0.20 | 450 | n (rev/min) | 55008 | 27504 | 18336 | 13752 | 9168 | 6876 | 5501 | 4584 | 3438 | 2750 | 2292 | 1719 |
| | | | | | $f_z$ (in) | 0.00027 | 0.00054 | 0.00081 | 0.00108 | 0.00161 | 0.00215 | 0.00269 | 0.00323 | 0.00430 | 0.00538 | 0.00645 | 0.00860 |
| | | | | 435 - 465 | $v_f$ (in/min) | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 |
| | M / A / D 7b (52>62HRc) | 0.03 | 0.10 | 400 | n (rev/min) | 48896 | 24448 | 16299 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | $f_z$ (in) | 0.00019 | 0.00038 | 0.00056 | 0.00075 | 0.00113 | 0.00150 | 0.00188 | 0.00225 | 0.00300 | 0.00375 | 0.00450 | 0.00600 |
| | | | | 385 - 415 | $v_f$ (in/min) | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 |

| SIDE MILLING - FINISHING | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 5 - 6 | 0.10 | 0.15 | 500 | n (rev/min) | 61120 | 30560 | 20373 | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | | | $f_z$ (in) | 0.00030 | 0.00059 | 0.00089 | 0.00119 | 0.00178 | 0.00238 | 0.00297 | 0.00356 | 0.00475 | 0.00594 | 0.00713 | 0.00950 |
| | | | | 440 - 560 | $v_f$ (in/min) | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 |
| H | M / A / D 7a (48>52HRc) | 0.05 | 0.10 | 450 | n (rev/min) | 55008 | 27504 | 18336 | 13752 | 9168 | 6876 | 5501 | 4584 | 3438 | 2750 | 2292 | 1719 |
| | | | | | $f_z$ (in) | 0.00027 | 0.00054 | 0.00081 | 0.00108 | 0.00161 | 0.00215 | 0.00269 | 0.00323 | 0.00430 | 0.00538 | 0.00645 | 0.00860 |
| | | | | 435 - 465 | $v_f$ (in/min) | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 | 29.6 |
| | M / A / D 7b (52>62HRc) | 0.03 | 0.05 | 400 | n (rev/min) | 48896 | 24448 | 16299 | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 | 2445 | 2037 | 1528 |
| | | | | | $f_z$ (in) | 0.00019 | 0.00038 | 0.00056 | 0.00075 | 0.00113 | 0.00150 | 0.00188 | 0.00225 | 0.00300 | 0.00375 | 0.00450 | 0.00600 |
| | | | | 385 - 415 | $v_f$ (in/min) | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 |

**MZ645 / MZ645R**

| SIDE MILLING - ROUGHING | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 6$ | | | | | |
| | | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 |
| P | E 5 - 6 | 1.50 | 0.10 | 450 | n (rev/min) | 13752 | 9168 | 6876 | 5501 | 4584 | 3438 |
| | | | | | $f_z$ (in) | 0.00075 | 0.00113 | 0.00150 | 0.00188 | 0.00225 | 0.00300 |
| | | | | 390 - 510 | $v_f$ (in/min) | 61.9 | 61.9 | 61.9 | 61.9 | 61.9 | 61.9 |
| H | M / A / D 7a (48>52HRc) | 1.00 | 0.05 | 450 | n (rev/min) | 13752 | 9168 | 6876 | 5501 | 4584 | 3438 |
| | | | | | $f_z$ (in) | 0.00056 | 0.00084 | 0.00113 | 0.00141 | 0.00169 | 0.00225 |
| | | | | 435 - 465 | $v_f$ (in/min) | 46.4 | 46.4 | 46.4 | 46.4 | 46.4 | 46.4 |
| | M / A / D 7b (52>62HRc) | 1.00 | 0.02 | 400 | n (rev/min) | 12224 | 8149 | 6112 | 4890 | 4075 | 3056 |
| | | | | | $f_z$ (in) | 0.00040 | 0.00060 | 0.00080 | 0.00100 | 0.00120 | 0.00160 |
| | | | | 385 - 415 | $v_f$ (in/min) | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

# THREAD MILLS- NTM100UN

SOLID CARBIDE

- Helical flutes for internal and external threading

| EDP | DESCRIPTION | THREAD SIZE | THREADS PER INCH | CUTTER DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | CUTTING TEETH | COATING | DRILL SIZE 50% | DRILL SIZE 75% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N68746 | NTM100-Nr.2X56UN-.125 | 2 | 56 | 0.065 | 1/8 | 0.1250 | 2 | 3 | AlCrN | 49 | 50 |
| N68748 | NTM100-Nr.4X40UN-.125 | 4 | 40 | 0.085 | 1/8 | 0.1750 | 2 | 3 | AlCrN | 41 | 43 |
| N68750 | NTM100-Nr.6X32UN-.125 | 6 | 32 | 0.100 | 1/8 | 0.2180 | 2 | 3 | AlCrN | 32 | 36 |
| N68752 | NTM100-Nr.8X32UN-.125 | 8 | 32 | 0.115 | 1/8 | 0.2500 | 2 | 3 | AlCrN | 27 | 29 |
| N68754 | NTM100-Nr.10X24UN-.187 | 10 | 24 | 0.134 | 3/16 | 0.3130 | 2 | 3 | AlCrN | 20 | 25 |
| N68756 | NTM100-Nr.10X28UN-.187 | 10 | 28 | 0.134 | 3/16 | 0.3130 | 2 | 3 | AlCrN | 19 | 23 |
| N68758 | NTM100-Nr.10X32UN-.187 | 10 | 32 | 0.134 | 3/16 | 0.3130 | 2 | 3 | AlCrN | 18 | 21 |
| N68760 | NTM100-1/4X20UN-.187 | 1/4 | 20 | 0.180 | 3/16 | 0.5000 | 2-1/2 | 3 | AlCrN | 7/32 | 7 |
| N68762 | NTM100-1/4X28UN-.187 | 1/4 | 28 | 0.180 | 3/16 | 0.5000 | 2-1/2 | 3 | AlCrN | 1 | 3 |
| N68764 | NTM100-1/4X32UN-.187 | 1/4 | 32 | 0.180 | 3/16 | 0.5000 | 2-1/2 | 3 | AlCrN | 1 | 7/32 |
| N68766 | NTM100-5/16X18UN-.250 | 5/16 | 18 | 0.235 | 1/4 | 0.6250 | 2-1/2 | 3 | AlCrN | J | F |
| N68768 | NTM100-5/16X24UN-.250 | 5/16 | 24 | 0.235 | 1/4 | 0.6250 | 2-1/2 | 3 | AlCrN | 9/32 | I |
| N68770 | NTM100-5/16X32UN-.250 | 5/16 | 32 | 0.235 | 1/4 | 0.6250 | 2-1/2 | 3 | AlCrN | L | 9/32 |
| N68772 | NTM100-3/8X16UN-.375 | 3/8 | 16 | 0.285 | 5/16 | 0.7500 | 3 | 3 | AlCrN | Q | 5/16 |
| N68774 | NTM100-3/8X24UN-.312 | 3/8 | 24 | 0.285 | 5/16 | 0.7500 | 3 | 3 | AlCrN | S | Q |
| N68776 | NTM100-7/16X14UN-.312 | 7/16 | 14 | 0.305 | 5/16 | 0.8750 | 3 | 3 | AlCrN | 25/64 | U |
| N68778 | NTM100-7/16X20UN-.375 | 7/16 | 20 | 0.305 | 5/16 | 0.8750 | 3 | 3 | AlCrN | 13/32 | 25/64 |
| N68784 | NTM100-1/2X28UN-.375 | 1/2 | 28 | 0.350 | 3/8 | 0.8750 | 3-1/2 | 3 | AlCrN | 15/32 | 15/32 |
| N68786 | NTM100-9/16X12UN-.375 | 9/16 | 12 | 0.370 | 3/8 | 0.8750 | 3-1/2 | 4 | AlCrN | 33/64 | 31/64 |
| N68788 | NTM100-9/16X18UN-.375 | 9/16 | 18 | 0.370 | 3/8 | 0.8750 | 3-1/2 | 4 | AlCrN | 17/32 | 33/64 |
| N68780 | NTM100-1/2X13UN-.375 | 1/2 | 13 | 0.350 | 3/8 | 0.8750 | 3-1/2 | 3 | AlCrN | 29/64 | 27/64 |
| N68782 | NTM100-1/2X20UN-.375 | 1/2 | 20 | 0.350 | 3/8 | 0.8750 | 3-1/2 | 3 | AlCrN | 15/32 | 29/64 |
| N68790 | NTM100-5/8X11UN-.500 | 5/8 | 11 | 0.470 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 9/16 | 17/32 |
| N68792 | NTM100-5/8X12UN-.500 | 5/8 | 12 | 0.470 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 9/16 | 35/64 |
| N68794 | NTM100-5/8X18UN-.500 | 5/8 | 18 | 0.470 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 19/32 | 37/64 |
| N68796 | NTM100-3/4X10UN-.500 | 3/4 | 10 | 0.495 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 11/16 | 21/32 |
| N68798 | NTM100-3/4X12UN-.500 | 3/4 | 12 | 0.495 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 11/16 | 43/64 |
| N68800 | NTM100-3/4X16UN-.500 | 3/4 | 16 | 0.495 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 45/64 | 11/16 |
| N68802 | NTM100-3/4X20UN-.500 | 3/4 | 20 | 0.495 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 23/32 | 45/64 |
| N68804 | NTM100-7/8X9UN-.625 | 7/8 | 9 | 0.620 | 5/8 | 1.3750 | 4 | 4 | AlCrN | 51/64 | 49/64 |
| N68806 | NTM100-7/8X12UN-.625 | 7/8 | 12 | 0.620 | 5/8 | 1.3750 | 4 | 4 | AlCrN | 13/16 | 51/64 |
| N68808 | NTM100-7/8X14UN-.625 | 7/8 | 14 | 0.620 | 5/8 | 1.3750 | 4 | 4 | AlCrN | 53/64 | 13/16 |
| N68810 | NTM100-7/8X16UN-.625 | 7/8 | 16 | 0.620 | 5/8 | 1.3750 | 4 | 4 | AlCrN | 53/64 | 13/16 |
| N68812 | NTM100-7/8X20UN-.625 | 7/8 | 20 | 0.620 | 5/8 | 1.3750 | 4 | 4 | AlCrN | 27/32 | 53/64 |
| N68814 | NTM100-1X8UN-.625 | 1 | 8 | 0.620 | 5/8 | 1.3750 | 4 | 4 | AlCrN | 59/64 | 7/8 |
| N68816 | NTM100-1X12UN.625 | 1 | 12 | 0.620 | 5/8 | 1.3750 | 4 | 4 | AlCrN | 61/64 | 15/16 |
| N68818 | NTM100-1X16UN-.625 | 1 | 16 | 0.620 | 5/8 | 1.3750 | 4 | 4 | AlCrN | 61/64 | 15/16 |

# THREAD MILLS- NTM120UN

SOLID CARBIDE

- Helical flutes for internal and external threading
- Coolant-through feature

| EDP | DESCRIPTION | THREAD SIZE | THREADS PER INCH | CUTTER DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | CUTTING TEETH | COATING | DRILL SIZE 50% | DRILL SIZE 75% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N34479 | NTM120-Nr.10X24UN-.187 | 10 | 24 | 0.134 | 3/16 | 0.3130 | 2 | 3 | AlCrN | 20 | 25 |
| N34480 | NTM120-Nr.10X32UN-.187 | 10 | 32 | 0.134 | 3/16 | 0.3130 | 2 | 3 | AlCrN | 18 | 21 |
| N34481 | NTM120-1/4X20UN-.187 | 1/4 | 20 | 0.180 | 3/16 | 0.5000 | 2-1/2 | 3 | AlCrN | 7/32 | 7 |
| N34482 | NTM120-1/4X28UN-.187 | 1/4 | 28 | 0.180 | 3/16 | 0.5000 | 2-1/2 | 3 | AlCrN | 1 | 3 |
| N34483 | NTM120-5/16X18UN-.250 | 5/16 | 18 | 0.235 | 1/4 | 0.6250 | 2-1/2 | 3 | AlCrN | J | F |
| N34484 | NTM120-5/16X24UN-.250 | 5/16 | 24 | 0.235 | 1/4 | 0.6250 | 2-1/2 | 3 | AlCrN | 9/32 | I |
| N34485 | NTM120-3/8X16UN-.312 | 3/8 | 16 | 0.285 | 5/16 | 0.7500 | 3 | 3 | AlCrN | Q | 5/16 |
| N34486 | NTM120-3/8X24UN-.312 | 3/8 | 24 | 0.285 | 5/16 | 0.7500 | 3 | 3 | AlCrN | S | Q |
| N34487 | NTM120-7/16X14UN-.312 | 7/16 | 14 | 0.305 | 5/16 | 0.8750 | 3 | 3 | AlCrN | 25/64 | U |
| N34488 | NTM120-7/16X20UN-.312 | 7/16 | 20 | 0.305 | 5/16 | 0.8750 | 3 | 3 | AlCrN | 13/32 | 25/64 |
| N34489 | NTM120-1/2X13UN-.375 | 1/2 | 13 | 0.350 | 3/8 | 0.8750 | 3-1/2 | 3 | AlCrN | 29/64 | 27/64 |
| N34490 | NTM120-1/2X20UN-.375 | 1/2 | 20 | 0.350 | 3/8 | 0.8750 | 3-1/2 | 3 | AlCrN | 15/32 | 29/64 |
| N34491 | NTM120-9/16X12UN-.375 | 9/16 | 12 | 0.370 | 3/8 | 0.8750 | 3-1/2 | 4 | AlCrN | 33/64 | 31/64 |
| N34492 | NTM120-9/16X18UN-.375 | 9/16 | 18 | 0.370 | 3/8 | 0.8750 | 3-1/2 | 4 | AlCrN | 17/32 | 33/64 |
| N34493 | NTM120-5/8X11UN-.500 | 5/8 | 11 | 0.470 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 9/16 | 17/32 |
| N34494 | NTM120-3/4x10UN-.500 | 3/4 | 10 | 0.495 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 11/16 | 21/32 |
| N34495 | NTM120-3/4X12UN-.500 | 3/4 | 12 | 0.495 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 11/16 | 43/64 |
| N34496 | NTM120-3/4X16UN-.500 | 3/4 | 16 | 0.495 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 45/64 | 11/16 |
| N34497 | NTM120-7/8X9UN-.625 | 7/8 | 9 | 0.620 | 5/8 | 1.3750 | 4 | 4 | AlCrN | 51/64 | 49/64 |
| N34498 | NTM120-1X8UN-.625 | 1 | 8 | 0.620 | 5/8 | 1.3750 | 4 | 4 | AlCrN | 59/64 | 7/8 |

# THREAD MILLS- NTM160UN

SOLID CARBIDE

- Helical flutes for internal and external threading
- Extended reach

| EDP | DESCRIPTION | THREAD SIZE | THREADS PER INCH | CUTTER DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | CUTTING TEETH | COATING | REACH | DRILL SIZE 50% | DRILL SIZE 75% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N34570 | NTM160-Nr.10X32UN-.187 | 10 | 32 | 0.134 | 3/16 | 0.1000 | 2 | 3 | AlCrN | 0.500 | 18 | 21 |
| N34569 | NTM160-Nr.10X28UN-.187 | 10 | 28 | 0.134 | 3/16 | 0.1100 | 2 | 3 | AlCrN | 0.400 | 19 | 23 |
| N34568 | NTM160-Nr.10X24UN-.187 | 10 | 24 | 0.134 | 3/16 | 0.1250 | 2 | 3 | AlCrN | 0.300 | 20 | 25 |
| N34573 | NTM160-1/4X32UN-.187 | 1/4 | 32 | 0.180 | 3/16 | 0.1000 | 2-1/2 | 3 | AlCrN | 0.950 | 1 | 7/32 |
| N34572 | NTM160-1/4X28UN-.187 | 1/4 | 28 | 0.180 | 3/16 | 0.1100 | 2-1/2 | 3 | AlCrN | 0.875 | 1 | 3 |
| N34571 | NTM160-1/4X20UN-.187 | 1/4 | 20 | 0.180 | 3/16 | 0.1500 | 2-1/2 | 3 | AlCrN | 0.670 | 7/32 | 7 |
| N34576 | NTM160-5/16X32UN-.250 | 5/16 | 32 | 0.235 | 1/4 | 0.1000 | 2-1/2 | 3 | AlCrN | 1.375 | L | 9/32 |
| N34575 | NTM160-5/16X24UN-.250 | 5/16 | 24 | 0.235 | 1/4 | 0.1250 | 2-1/2 | 3 | AlCrN | 1.250 | 9/32 | I |
| N34574 | NTM160-5/16X18UN-.250 | 5/16 | 18 | 0.235 | 1/4 | 0.1700 | 2-1/2 | 3 | AlCrN | 1 | J | F |
| N34578 | NTM160-3/8X24UN-.312 | 3/8 | 24 | 0.285 | 5/16 | 0.1250 | 3 | 3 | AlCrN | 1.625 | S | Q |
| N34577 | NTM160-3/8X16UN-.312 | 3/8 | 16 | 0.285 | 5/16 | 0.1880 | 3 | 3 | AlCrN | 1.350 | Q | 5/16 |
| N34580 | NTM160-7/16X20UN-.312 | 7/16 | 20 | 0.305 | 5/16 | 0.1500 | 3 | 3 | AlCrN | 1.670 | 13/32 | 25/64 |
| N34579 | NTM160-7/16X14UN-.312 | 7/16 | 14 | 0.305 | 5/16 | 0.2150 | 3 | 3 | AlCrN | 1.375 | 25/64 | U |
| N34583 | NTM160-1/2X28UN-.375 | 1/2 | 28 | 0.350 | 3/8 | 0.1100 | 4 | 3 | AlCrN | 2.250 | 15/32 | 15/32 |
| N34582 | NTM160-1/2X20UN-.375 | 1/2 | 20 | 0.350 | 3/8 | 0.1500 | 4 | 3 | AlCrN | 1.250 | 15/32 | 29/64 |
| N34581 | NTM160-1/2X13UN-.375 | 1/2 | 13 | 0.350 | 3/8 | 0.2300 | 4 | 3 | AlCrN | 1.670 | 29/64 | 27/64 |
| N34584 | NTM160-9/16X12UN-.375 | 9/16 | 12 | 0.370 | 3/8 | 0.2500 | 4 | 4 | AlCrN | 1.725 | 33/64 | 31/64 |
| N34585 | NTM160-9/16X18UN-.375 | 9/16 | 18 | 0.370 | 3/5 | 0.1700 | 4 | 4 | AlCrN | 2.100 | 17/32 | 33/64 |
| N34588 | NTM160-5/8X18UN-.500 | 5/8 | 18 | 0.470 | 1/2 | 0.1700 | 4-1/2 | 4 | AlCrN | 2.900 | 19/32 | 37/64 |
| N34587 | NTM160-5/8X12UN-.500 | 5/8 | 12 | 0.470 | 1/2 | 0.2500 | 4-1/2 | 4 | AlCrN | 2.525 | 9/16 | 35/64 |
| N34586 | NTM160-5/8X11UN-.500 | 5/8 | 11 | 0.470 | 1/2 | 0.2750 | 4-1/2 | 4 | AlCrN | 2.400 | 9/16 | 17/32 |
| N34592 | NTM160-3/4X20UN-.500 | 3/4 | 20 | 0.495 | 1/2 | 0.1500 | 5 | 4 | AlCrN | 3.188 | 23/32 | 45/64 |
| N34591 | NTM160-3/4X16UN-.500 | 3/4 | 16 | 0.495 | 1/2 | 0.1880 | 5 | 4 | AlCrN | 3.000 | 45/64 | 11/16 |
| N34590 | NTM160-3/4X12UN-.500 | 3/4 | 12 | 0.495 | 1/2 | 0.2500 | 5 | 4 | AlCrN | 2.750 | 11/16 | 43/64 |
| N34589 | NTM160-3/4X10UN-.500 | 3/4 | 10 | 0.495 | 1/2 | 0.3000 | 5 | 4 | AlCrN | 2.500 | 11/16 | 21/32 |
| N34597 | NTM160-7/8X20UN-.625 | 7/8 | 20 | 0.620 | 5/8 | 0.1500 | 6 | 4 | AlCrN | 4.188 | 27/32 | 53/64 |
| N34596 | NTM160-7/8X16UN-.625 | 7/8 | 16 | 0.620 | 5/8 | 0.1880 | 6 | 4 | AlCrN | 4.000 | 53/64 | 13/16 |
| N34595 | NTM160-7/8X14UN-.625 | 7/8 | 14 | 0.620 | 5/8 | 0.2150 | 6 | 4 | AlCrN | 3.900 | 53/64 | 13/16 |
| N34594 | NTM160-7/8X12UN-.625 | 7/8 | 12 | 0.620 | 5/8 | 0.2500 | 6 | 4 | AlCrN | 3.725 | 13/16 | 51/64 |
| N34593 | NTM160-7/8X9UN-.625 | 7/8 | 9 | 0.620 | 5/8 | 0.3330 | 6 | 4 | AlCrN | 3.300 | 51/64 | 49/64 |
| N34600 | NTM160-1X16UN-.625 | 1 | 16 | 0.620 | 5/8 | 0.1880 | 6 | 4 | AlCrN | 4.000 | 61/64 | 15/16 |
| N34599 | NTM160-1X12UN-.625 | 1 | 12 | 0.620 | 5/8 | 0.2500 | 6 | 4 | AlCrN | 3.725 | 61/64 | 15/16 |
| N34598 | NTM160-1X8UN-.625 | 1 | 8 | 0.620 | 5/8 | 0.3750 | 6 | 4 | AlCrN | 3.150 | 59/64 | 7/8 |

# THREAD MILLS- NTM200NPT

SOLID CARBIDE

- Straight flutes for internal and external threading

| EDP | DESCRIPTION | THREAD SIZE | THREADS PER INCH | CUTTER DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | CUTTING TEETH | COATING | DRILL SIZE |
|---|---|---|---|---|---|---|---|---|---|---|
| N68820 | NTM200-1/16X27NPT-.250 | 1/16 | 27 | 0.245 | 1/4 | 0.4375 | 2-1/2 | 3 | AlCrN | B |
| N68822 | NTM200-1/8X27NPT-.250 | 1/8 | 27 | 0.245 | 1/4 | 0.4375 | 2-1/2 | 3 | AlCrN | 21/64 |
| N68824 | NTM200-1/4X18NPT-.371 | 1/4 | 18 | 0.305 | 5/16 | 0.6250 | 3 | 3 | AlCrN | 27/64 |
| N68826 | NTM200-3/8X18NPT-.312 | 3/8 | 18 | 0.305 | 5/16 | 0.6250 | 3 | 3 | AlCrN | 9/16 |
| N68828 | NTM200-1/2X14NPT-.500 | 1/2 | 14 | 0.495 | 1/2 | 0.8750 | 4 | 4 | AlCrN | 11/16 |
| N68830 | NTM200-3/4X14NPT-.500 | 3/4 | 14 | 0.495 | 1/2 | 0.8750 | 4 | 4 | AlCrN | 29/32 |
| N68832 | NTM200-1X11.5NPT-.625 | 1 | 11.5 | 0.620 | 5/8 | 1.1250 | 4 | 4 | AlCrN | 1-5/32 |
| N68834 | NTM200-2-1/2X8NPT-.750 | 2.5 | 8 | 0.745 | 3/4 | 1.5000 | 5 | 4 | AlCrN | 2-39/64 |

# THREAD MILLS- NTM300NPTF

SOLID CARBIDE

- Straight flutes for internal and external threading

| EDP | DESCRIPTION | THREAD SIZE | THREADS PER INCH | CUTTER DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | CUTTING TEETH | COATING | DRILL SIZE |
|---|---|---|---|---|---|---|---|---|---|---|
| N68836 | NTM300-1/16X27NPTF-.250 | 1/16 | 27 | 0.245 | 1/4 | 0.4375 | 2-1/2 | 3 | AlCrN | B |
| N68838 | NTM300-1/8X27NPTF-.250 | 1/8 | 27 | 0.245 | 1/4 | 0.4375 | 2-1/2 | 3 | AlCrN | 21/64 |
| N68840 | NTM300-1/4X18NPTF-.312 | 1/4 | 18 | 0.305 | 5/16 | 0.6250 | 3 | 3 | AlCrN | 27/64 |
| N68842 | NTM300-3/8X18NPTF-.312 | 3/8 | 18 | 0.305 | 5/16 | 0.6250 | 3 | 3 | AlCrN | 9/16 |
| N68844 | NTM300-1/2X4NPTF-.500 | 1/2 | 14 | 0.495 | 1/2 | 0.8750 | 4 | 4 | AlCrN | 11/16 |
| N68846 | NTM300-3/4X14NPTF-.500 | 3/4 | 14 | 0.495 | 1/2 | 0.8750 | 4 | 4 | AlCrN | 29/32 |
| N68848 | NTM300-1X11.5NPTF-.625 | 1.0 | 11.5 | 0.620 | 5/8 | 1.1250 | 4 | 4 | AlCrN | 1-5/32 |

# METRIC THREAD MILLS- NTM400MI

SOLID CARBIDE

- Helical flutes for internal and external threading

| EDP | DESCRIPTION | THREAD SIZE | THREADS PER INCH | CUTTER DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | CUTTING TEETH | COATING | DRILL SIZE 75% |
|---|---|---|---|---|---|---|---|---|---|---|
| N68850 | NTM400-M3X.5ISO-.125 | M3 | .5 | 0.085 | 1/8 | 0.1780 | 2 | 3 | AlCrN | 39 |
| N68852 | NTM400-M3.5X.6ISO-.125 | M3.5 | .6 | 0.095 | 1/8 | 0.2350 | 2 | 3 | AlCrN | 32 |
| N68854 | NTM400-M4X.7ISO-.125 | M4 | .7 | 0.115 | 1/8 | 0.2760 | 2 | 3 | AlCrN | 30 |
| N68856 | NTM400-M4.5X.75ISO-.125 | M4.5 | .75 | 0.134 | 3/16 | 0.3130 | 2 | 3 | AlCrN | 19 |
| N68858 | NTM400-M5-X.8ISO-.125 | M5 | .8 | 0.134 | 3/16 | 0.3130 | 2 | 3 | AlCrN | 19 |
| N68860 | NTM400-M6X1.0ISO-.187 | M6 | 1 | 0.170 | 3/16 | 0.5000 | 2-1/2 | 3 | AlCrN | 8 |
| N68862 | NTM400-M8X1.0ISO-.250 | M8 | 1 | 0.235 | 1/4 | 0.6250 | 2-1/2 | 3 | AlCrN | J |
| N68864 | NTM400-M8X1.25ISO-.250 | M8 | 1.25 | 0.235 | 1/4 | 0.6250 | 2-1/2 | 3 | AlCrN | H |
| N68866 | NTM400-M10X1.25ISO-.312 | M10 | 1.25 | 0.300 | 5/16 | 0.7500 | 3 | 3 | AlCrN | 11/32 |
| N68868 | NTM400-M10X1.5ISO-.312 | M10 | 1.5 | 0.300 | 5/16 | 0.7500 | 3 | 3 | AlCrN | R |
| N68870 | NTM400-M12X1.25ISO-.375 | M12 | 1.25 | 0.360 | 3/8 | 0.8750 | 3-1/2 | 3 | AlCrN | 27/64 |
| N68872 | NTM400-M12X1.75ISO-.375 | M12 | 1.75 | 0.360 | 3/8 | 0.8750 | 3-1/2 | 3 | AlCrN | 13/32 |
| N68874 | NTM400-M14X1.25ISO-.375 | M14 | 1.25 | 0.370 | 3/8 | 0.8750 | 3-1/2 | 4 | AlCrN | 1/2 |
| N68876 | NTM400-M14X1.5ISO-.375 | M14 | 1.5 | 0.370 | 3/8 | 0.8750 | 3-1/2 | 4 | AlCrN | 1/2 |
| N68878 | NTM400-M14X2.0ISO-.375 | M14 | 2 | 0.370 | 3/8 | 0.8750 | 3-1/2 | 4 | AlCrN | 15/32 |
| N68880 | NTM400-M16X2.0ISO-.500 | M16 | 2 | 0.470 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 35/64 |
| N68882 | NTM400-M18X2.5ISO-.500 | M18 | 2.5 | 0.490 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 39/64 |
| N68884 | NTM400-M20X1.5ISO-.500 | M20 | 1.5 | 0.495 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 47/64 |
| N68886 | NTM400-M20X2.0ISO-.500 | M20 | 2 | 0.495 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 11/16 |
| N68888 | NTM400-M20X2.5ISO-.500 | M20 | 2.5 | 0.495 | 1/2 | 1.2500 | 4 | 4 | AlCrN | 11/16 |
| N68890 | NTM400-M24X1.5ISO-.625 | M24 | 1.5 | 0.620 | 5/8 | 1.3730 | 4 | 4 | AlCrN | 22.5mm |
| N68892 | NTM400-M24X2.0ISO-.625 | M24 | 2 | 0.620 | 5/8 | 1.3730 | 4 | 4 | AlCrN | 7/8 |
| N68894 | NTM400-M24X2.5ISO-.625 | M24 | 2.5 | 0.620 | 5/8 | 1.3730 | 4 | 4 | AlCrN | 21.5mm |
| N68896 | NTM400-M24X3.0ISO-.625 | M24 | 3 | 0.620 | 5/8 | 1.3750 | 4 | 4 | AlCrN | 53/64 |

Niagara Cutter

## THREAD MILLS - INCH

| THREAD MILLING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $v_c$ (sf / min) | | $Z_n = 3$ | | | | | $Z_n = 4$ | | | | | |
| | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| P | E 1 - 2 | 500 | n (rev/min) | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | $f_z$ (in) | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
| | | 450 - 550 | $v_f$ (in/min) | 22.9 | 22.9 | 22.9 | 22.9 | 22.9 | 22.9 | 30.6 | 30.6 | 30.6 |
| | E 3 - 4 | 350 | n (rev/min) | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 | 2139 | 1783 | 1337 |
| | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | 400 - 400 | $v_f$ (in/min) | 14.4 | 14.4 | 14.4 | 14.4 | 14.4 | 14.4 | 19.3 | 19.3 | 19.3 |
| | E 5 - 6 | 275 | n (rev/min) | 8404 | 5603 | 4202 | 3362 | 2801 | 2101 | 1681 | 1401 | 1051 |
| | | | $f_z$ (in) | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | 250 - 300 | $v_f$ (in/min) | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 12.6 | 12.6 | 12.6 |
| H | M / A 7 >45HRc | 150 | n (rev/min) | 4584 | 3056 | 2292 | 1834 | 1528 | 1146 | 917 | 764 | 573 |
| | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 |
| | | 125 - 175 | $v_f$ (in/min) | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 4.1 | 4.1 | 4.1 |
| M | E 8 - 9 | 350 | n (rev/min) | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 | 2139 | 1783 | 1337 |
| | | | $f_z$ (in) | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | 300 - 400 | $v_f$ (in/min) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 16.0 | 16.0 | 16.0 |
| | E 10 - 11 | 250 | n (rev/min) | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 | 1528 | 1273 | 955 |
| | | | $f_z$ (in) | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | 200 - 300 | $v_f$ (in/min) | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 11.5 | 11.5 | 11.5 |
| K | E 12 - 13 | 500 | n (rev/min) | 15280 | 10187 | 7640 | 6112 | 5093 | 3820 | 3056 | 2547 | 1910 |
| | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0050 |
| | | 450 - 550 | $v_f$ (in/min) | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 38.2 | 38.2 | 38.2 |
| | E 14 - 15 | 425 | n (rev/min) | 12988 | 8659 | 6494 | 5195 | 4329 | 3247 | 2598 | 2165 | 1624 |
| | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 |
| | | 375 - 475 | $v_f$ (in/min) | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 23.4 | 23.4 | 23.4 |
| N | E 16 | 600 | n (rev/min) | 18336 | 12224 | 9168 | 7334 | 6112 | 4584 | 3667 | 3056 | 2292 |
| | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0050 |
| | | 550 - 650 | $v_f$ (in/min) | 34.4 | 34.4 | 34.4 | 34.4 | 34.4 | 34.4 | 45.8 | 45.8 | 45.8 |
| | E 17 | 600 | n (rev/min) | 18336 | 12224 | 9168 | 7334 | 6112 | 4584 | 3667 | 3056 | 2292 |
| | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0050 |
| | | 550 - 650 | $v_f$ (in/min) | 34.4 | 34.4 | 34.4 | 34.4 | 34.4 | 34.4 | 45.8 | 45.8 | 45.8 |
| | E 18 | 600 | n (rev/min) | 18336 | 12224 | 9168 | 7334 | 6112 | 4584 | 3667 | 3056 | 2292 |
| | | | $f_z$ (in) | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
| | | 550 - 650 | $v_f$ (in/min) | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 36.7 | 36.7 | 36.7 |
| S | E 20 | 100 | n (rev/min) | 3056 | 2037 | 1528 | 1222 | 1019 | 764 | 611 | 509 | 382 |
| | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0006 | 0.0008 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | 80 - 120 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 3.7 | 3.7 | 3.7 |
| | E 21 | 100 | n (rev/min) | 3056 | 2037 | 1528 | 1222 | 1019 | 764 | 611 | 509 | 382 |
| | | | $f_z$ (in) | 0.0003 | 0.0005 | 0.0006 | 0.0008 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |
| | | 80 - 120 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 3.7 | 3.7 | 3.7 |
| | E 22 | 350 | n (rev/min) | 10696 | 7131 | 5348 | 4278 | 3565 | 2674 | 2139 | 1783 | 1337 |
| | | | $f_z$ (in) | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
| | | 330 - 370 | $v_f$ (in/min) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 16.0 | 16.0 | 16.0 |
| GRAPHITE | | 300 | n (rev/min) | 9168 | 6112 | 4584 | 3667 | 3056 | 2292 | 1834 | 1528 | 1146 |
| | | | $f_z$ (in) | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 |
| | | 250 - 350 | $v_f$ (in/min) | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 12.8 | 12.8 | 12.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

## THREAD MILLS - METRIC

| THREAD MILLING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | vc (m / min) | | | Zn = 3 | | | | | Zn = 4 | | | | |
| | | | | | 3 | 5 | 6 | 8 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 152 | | n (rev/min) | 16130 | 9680 | 8060 | 6050 | 4840 | 4030 | 3020 | 2420 | 1940 |
| | | | | $f_z$ (mm) | 0.012 | 0.020 | 0.024 | 0.032 | 0.040 | 0.048 | 0.064 | 0.080 | 0.100 |
| | | 137 | - 167 | $v_f$ (mm/min) | 581 | 581 | 580 | 581 | 581 | 580 | 773 | 774 | 776 |
| | E 3 - 4 | 107 | | n (rev/min) | 11350 | 6810 | 5680 | 4260 | 3410 | 2840 | 2130 | 1700 | 1360 |
| | | | | $f_z$ (mm) | 0.011 | 0.018 | 0.022 | 0.029 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | 122 | - 122 | $v_f$ (mm/min) | 368 | 368 | 368 | 368 | 368 | 368 | 491 | 490 | 490 |
| | E 5 - 6 | 84 | | n (rev/min) | 8910 | 5350 | 4460 | 3340 | 2670 | 2230 | 1670 | 1340 | 1070 |
| | | | | $f_z$ (mm) | 0.009 | 0.015 | 0.018 | 0.024 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 |
| | | 76 | - 91 | $v_f$ (mm/min) | 241 | 241 | 241 | 240 | 240 | 241 | 321 | 322 | 321 |
| H | M / A 7 >45HRc | 46 | | n (rev/min) | 4880 | 2930 | 2440 | 1830 | 1460 | 1220 | 920 | 730 | 590 |
| | | | | $f_z$ (mm) | 0.005 | 0.009 | 0.011 | 0.014 | 0.018 | 0.022 | 0.029 | 0.036 | 0.045 |
| | | 38 | - 53 | $v_f$ (mm/min) | 79 | 79 | 79 | 79 | 79 | 79 | 106 | 105 | 106 |
| M | E 8 - 9 | 107 | | n (rev/min) | 11350 | 6810 | 5680 | 4260 | 3410 | 2840 | 2130 | 1700 | 1360 |
| | | | | $f_z$ (mm) | 0.009 | 0.015 | 0.018 | 0.024 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 |
| | | 91 | - 400 | $v_f$ (mm/min) | 306 | 306 | 307 | 307 | 307 | 307 | 409 | 408 | 408 |
| | E 10 - 11 | 76 | | n (rev/min) | 8060 | 4840 | 4030 | 3020 | 2420 | 2020 | 1510 | 1210 | 970 |
| | | | | $f_z$ (mm) | 0.009 | 0.015 | 0.018 | 0.024 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 |
| | | 61 | - 91 | $v_f$ (mm/min) | 218 | 218 | 218 | 217 | 218 | 218 | 290 | 290 | 291 |
| K | E 12 - 13 | 152 | | n (rev/min) | 16130 | 9680 | 8060 | 6050 | 4840 | 4030 | 3020 | 2420 | 1940 |
| | | | | $f_z$ (mm) | 0.015 | 0.025 | 0.030 | 0.040 | 0.050 | 0.060 | 0.080 | 0.100 | 0.125 |
| | | 137 | - 168 | $v_f$ (mm/min) | 726 | 726 | 725 | 726 | 726 | 725 | 966 | 968 | 970 |
| | E 14 - 15 | 129 | | n (rev/min) | 13690 | 8210 | 6840 | 5130 | 4110 | 3420 | 2570 | 2050 | 1640 |
| | | | | $f_z$ (mm) | 0.011 | 0.018 | 0.022 | 0.029 | 0.036 | 0.043 | 0.058 | 0.072 | 0.090 |
| | | 114 | - 145 | $v_f$ (mm/min) | 444 | 443 | 443 | 443 | 444 | 443 | 592 | 590 | 590 |
| N | E 16 | 183 | | n (rev/min) | 19420 | 11650 | 9710 | 7280 | 5830 | 4850 | 3640 | 2910 | 2330 |
| | | | | $f_z$ (mm) | 0.015 | 0.025 | 0.030 | 0.040 | 0.050 | 0.060 | 0.080 | 0.100 | 0.125 |
| | | 168 | - 198 | $v_f$ (mm/min) | 874 | 874 | 874 | 874 | 875 | 873 | 1165 | 1164 | 1165 |
| | E 17 | 183 | | n (rev/min) | 19420 | 11650 | 9710 | 7280 | 5830 | 4850 | 3640 | 2910 | 2330 |
| | | | | $f_z$ (mm) | 0.015 | 0.025 | 0.030 | 0.040 | 0.050 | 0.060 | 0.080 | 0.100 | 0.125 |
| | | 168 | - 198 | $v_f$ (mm/min) | 874 | 874 | 874 | 874 | 875 | 873 | 1165 | 1164 | 1165 |
| | E 18 | 183 | | n (rev/min) | 19420 | 11650 | 9710 | 7280 | 5830 | 4850 | 3640 | 2910 | 2330 |
| | | | | $f_z$ (mm) | 0.012 | 0.020 | 0.024 | 0.032 | 0.040 | 0.048 | 0.064 | 0.080 | 0.100 |
| | | 168 | - 198 | $v_f$ (mm/min) | 699 | 699 | 699 | 699 | 700 | 698 | 932 | 931 | 932 |
| S | E 20 | 30 | | n (rev/min) | 3180 | 1910 | 1590 | 1190 | 950 | 800 | 600 | 480 | 380 |
| | | | | $f_z$ (mm) | 0.007 | 0.012 | 0.014 | 0.019 | 0.024 | 0.029 | 0.038 | 0.048 | 0.060 |
| | | 24 | - 37 | $v_f$ (mm/min) | 69 | 69 | 69 | 69 | 68 | 69 | 92 | 92 | 91 |
| | E 21 | 30 | | n (rev/min) | 3180 | 1910 | 1590 | 1190 | 950 | 800 | 600 | 480 | 380 |
| | | | | $f_z$ (mm) | 0.007 | 0.012 | 0.014 | 0.019 | 0.024 | 0.029 | 0.038 | 0.048 | 0.060 |
| | | 24 | - 37 | $v_f$ (mm/min) | 69 | 69 | 69 | 69 | 68 | 69 | 92 | 92 | 91 |
| | E 22 | 107 | | n (rev/min) | 11350 | 6810 | 5680 | 4260 | 3410 | 2840 | 2130 | 1700 | 1360 |
| | | | | $f_z$ (mm) | 0.009 | 0.015 | 0.018 | 0.024 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 |
| | | 101 | - 113 | $v_f$ (mm/min) | 306 | 306 | 307 | 307 | 307 | 307 | 409 | 408 | 408 |
| GRAPHITE | | 91 | | n (rev/min) | 9660 | 5790 | 4830 | 3620 | 2900 | 2410 | 1810 | 1450 | 1160 |
| | | | | $f_z$ (mm) | 0.008 | 0.014 | 0.017 | 0.022 | 0.028 | 0.034 | 0.045 | 0.056 | 0.070 |
| | | 76 | - 107 | $v_f$ (mm/min) | 243 | 243 | 243 | 243 | 244 | 243 | 324 | 325 | 325 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

# THREAD MILLING TECHNICAL DATA

## THREAD FORMS AND DESIGN

Standard Niagara Cutter Thread Mills - Thread Form Styles

- Unified National Coarse – UNC / 60 Degree / Common Std.
- Unified National Fine – UNF / 60 Degree / Common Std.
- Unified National Extra Fine – UNEF / 60 Degree / Common Std.
- National Pipe Tapered – NPT – 60 Degree
- National Pipe Tapered - NPTF
- Metric – M Series

Special Thread Mills Available Upon Request - Thread Form Styles

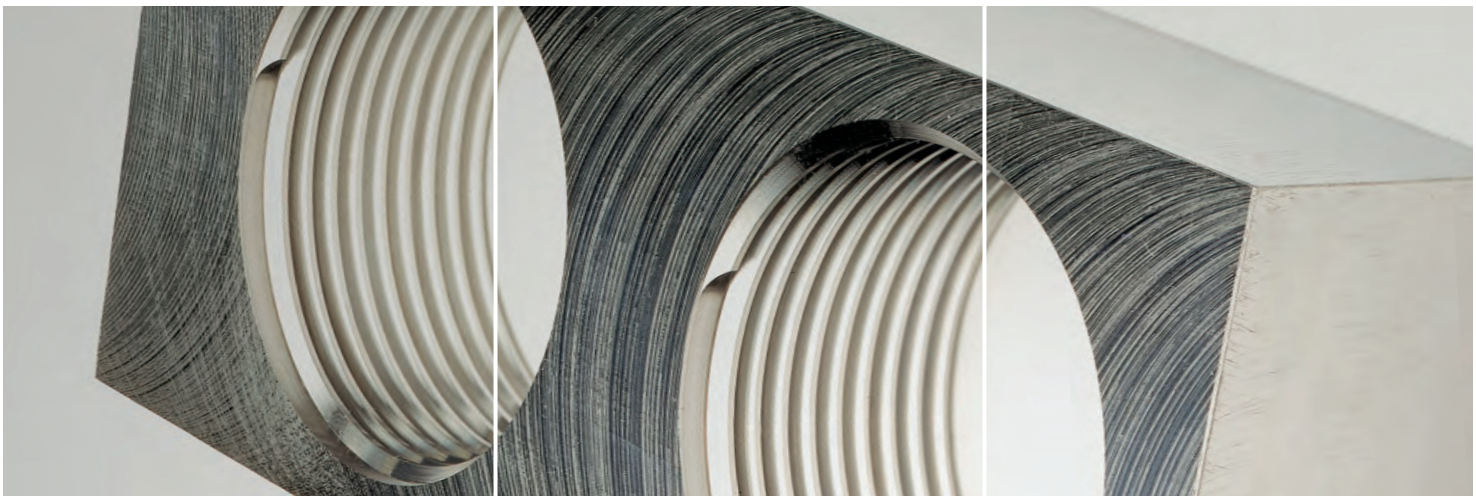
- UNJ - 60 Degree - Aerospace Threads / Controlled Root & Crest
- ACME Screw Threads – 29 Degree High Strength
- Buttress Threads – Three different styles 50, 45, and 33 Degree Threads
- American Petroleum Industry - API / 60 Degree / Controlled Root & Crest
- Whitworth Threads – 55 Degree

Please contact Niagara Cutter at 800-861-6111 if you have a special thread mill requirements. Information for special threads will include thread style, size, pitch, form & depth.

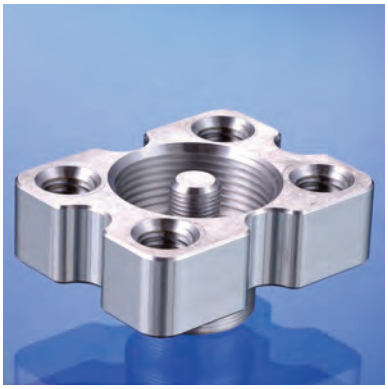
Thread Mill Design

Niagara Cutter Thread Mills are designed and comply with following standards:

- UN - ASME B1.1
- NPT / NPTF - ANSI / ASME B1.20.1
- Metric ISO 724



# THREAD MILLING TECHNICAL DATA



## THREAD MILL JUSTIFICATION

With modern machining centers utilizing helical interpolation programs, thread milling operations can be achieved economically. Thread milling offers many advantages over tapping and is a fast growing machining concept in the industry today.

Thread milling offers many advantages:

- One thread mill produces varying thread diameters of the same pitch
- One tool for left and right hand threads
- Increases quality; milled threads can be cut to full depth with excellent form, finish, and dimensional accuracy
- Easy machining of difficult materials
- Pitch diameter can be controlled by CNC offset
- NPT holes do not require taper reaming
- Produces small controllable chips
- Eliminates the safety issues and downtime associated with tap breakage
- Smaller machines can produce larger threads due to less spindle torque
- Less cutting pressure for thin walled workpieces
- Allows 100% thread depth -Tapping usually permits 65-75%

Is it faster to thread mill or tap the work piece?
This question is often asked. Look at the following example:

## THREADING APPLICATION COMPARISON

| Material | 4140 Steel | |
|---|---|---|
| Thread Size | 1/4 - 20 | |
| Depth-of-Thread | 1/2” | |
| Parameters | Thread Milling | Standard Tapping |
| SFM | 150 | 50 |
| IPM | 16.04 | 38.20 |
| Time-in-Cut (seconds) | .100 | .218 |

Thread milling is generating a very small circumference at a high feed rate.

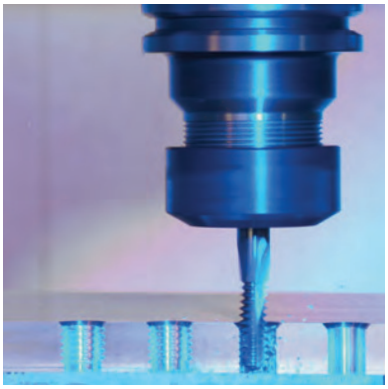
Example: Circumference = .050” Feed Rate = 16.04 IPM

## TAPPING VS THREAD MILLING

| Machining Comparison | Thread Mill | Traditional Tap |
|---|---|---|
| Broken Tooling Easy to Remove | + | - |
| Free Cutting | + | - |
| Consistent Results | + | - |
| Easy to thread difficult materials: Inconel, Stainless, Titanium, etc. | + | - |
| Special Programming | - | + |

# THREAD MILLING TECHNICAL DATA

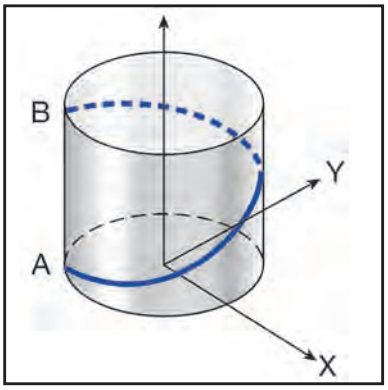
## APPLICATION RECOMMENDATIONS



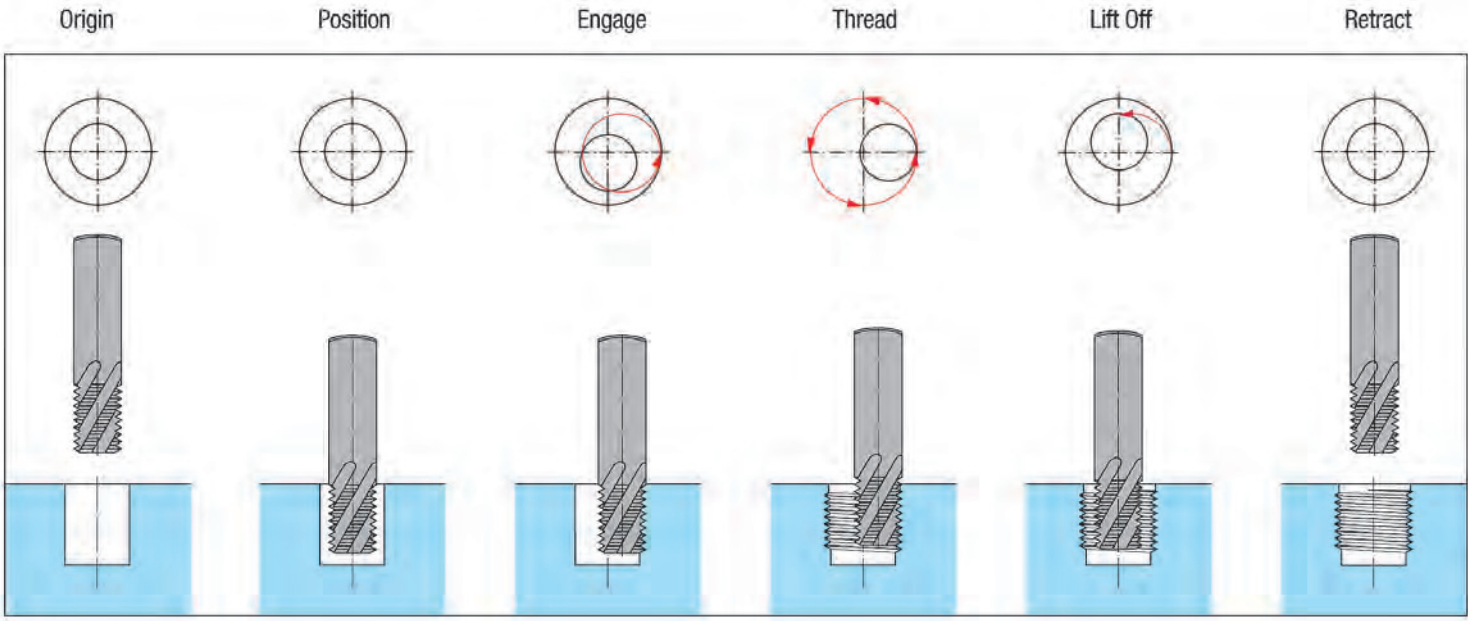
Thread milling tools form a thread using a motion referred to as helical interpolation. This process involves the movement of all three axes on the machine simultaneously. The X and Y axes move in a circular motion and the Z in an axial direction per 360 degrees at a distance equal to the pitch of the thread being machined.

Shown in Figure 1, the programmed tool path starts from the bottom (Point A) and moves toward the top (Point B). A right-hand thread will be climb cut using this process.
Note: When machining a right-hand thread you will be machining from bottom-to-top for climb cutting. If machining a left-hand thread you will start from top-to-bottom with a right-hand helix tool.
Left-hand threads can be climb cut with a left-hand helix tool starting from the bottom-to-top.

- Climb milling is the preferred method
- Start from the bottom of the hole to avoid re-cutting any chips
- Offset tool from center of the hole to allow a smooth start into the thread
- For difficult materials it may be necessary to make multiple passes

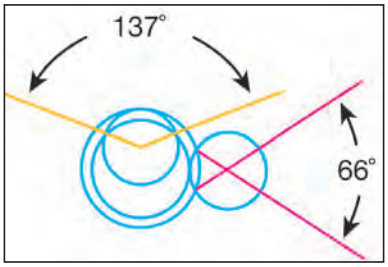



## TOOL PATH DURING THREADMILLING



# THREAD MILLING TECHNICAL DATA

## UNDERSTANDING FEED RATE CALCULATION




Normal milling feed rates are calculated from the center-line of the cutting tool. The regular feed rate calculation is Feed Rate = Revolutions per Minute (RPM) x Number of Cutting Teeth x Chip per Tooth. The circular motion of the thread mill cutting action requires a different calculation to be used.

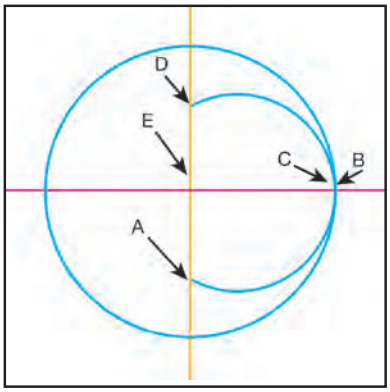
For an internal thread the feed rate at the cutting edge increases, as the cutter diameter increases. For an external thread the feed rate at the cutting edge decreases, as the cutter diameter decreases. As shown in the illustration the internal thread has a 137 degree engagement. While the external thread has a 66 degree engagement.

### FORMULAS:

**Internal Thread:** Feed Rate to be Programmed = Actual Feed Rate x (Diameter of the Work – Diameter of the Cutter) / Diameter of the Work

**External Thread:** Feed Rate to be Programmed = Actual Feed Rate x (Diameter of the Work + Diameter of the Cutter) / Diameter of the Work

## PROGRAMMING




A) Start Location

G01 G41 X_____ Y_____D____ F_____

B) Ramp into full depth-of-cut (Smooth Entrance)

G03 X_____ Y_____ Z_____ I_____ J _____

C) Counter Clockwise interpolation (Climb Cut)

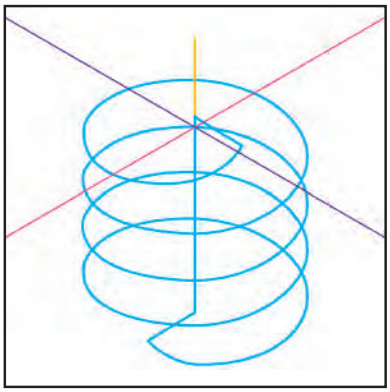
G03 X_____ Y_____ Z Thread Pitch I_____ J_____

D) Ramp off for a smooth exit

G03 X_____ Y _____

E) Ramp away from work surface

G01 G40 X_____ Y_____ Z_____ I_____ J _____



Cam software providers offer excellent thread mill programming routines and the programming is very easy to use. You will need to know the following application information:

Thread Size / Cutter Diameter / Thread Depth / Number of Passes / SFM / IPT

# SOLID END MILLS

## HIGH SPEED STEEL

High speed steel end mills are available in both center cutting and non center cutting geometries.

General purpose HSS end mills are available in a broad range of single end and double end styles. Configurations available are:

- 2,3,4 and Multi Flute Center Cutting
- 4 and Multi Flute Non-Center Cutting
- Square end and ball end
- Stub, regular, and long lengths of cut
- Miniature (3/16" shank)
- Metric flute diameter / inch shank

The A337 high helix geometry for aluminum combine a unique flute design and high performance geometries into a single end mill. This new design allows for higher feed-per-tooth rates and greater productivity. In addition, the eccentric O.D. relief helps reduce horizontal milling lines and keeps chatter to a minimum.

# GENERAL PURPOSE- S203

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- 2 Flute
- Designed for slotting and pocketing in all materials
- Weldon flat standard

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N20041 | S203-0.125-F3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 2-5/16 | 2 | |
| N20040 | S203-0.125-F3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 2-5/16 | 2 | TiN |
| N20051 | S203-0.156-F3-S.3-Z2 | 5/32 | 3/8 | 7/16 | 2-5/16 | 2 | |
| N20050 | S203-0.156-F3-S.3-Z2 | 5/32 | 3/8 | 7/16 | 2-5/16 | 2 | TiN |
| N20059 | S203-0.172-F3-S.3-Z2 | 11/64 | 3/8 | 7/16 | 2-5/16 | 2 | |
| N20058 | S203-0.172-F3-S.3-Z2 | 11/64 | 3/8 | 7/16 | 2-5/16 | 2 | TiN |
| N21061 | S203-0.188-F1-S.3-Z2 | 3/16 | 3/8 | 3/16 | 2-1/16 | 2 | |
| N21060 | S203-0.188-F1-S.3-Z2 | 3/16 | 3/8 | 3/16 | 2-1/16 | 2 | TiN |
| N20061 | S203-0.188-F2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 2-5/16 | 2 | |
| N20060 | S203-0.188-F2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 2-5/16 | 2 | TiN |
| N22061 | S203-0.188-F3-S.3-Z2 | 3/16 | 3/8 | 5/8 | 2-7/16 | 2 | |
| N22060 | S203-0.188-F3-S.3-Z2 | 3/16 | 3/8 | 5/8 | 2-7/16 | 2 | TiN |
| N23061 | S203-0.188-F4-S.3-Z2 | 3/16 | 3/8 | 3/4 | 2-5/8 | 2 | |
| N23060 | S203-0.188-F4-S.3-Z2 | 3/16 | 3/8 | 3/4 | 2-5/8 | 2 | TiN |
| N20069 | S203-0.203-F2-S.3-Z2 | 13/64 | 3/8 | 7/16 | 2-5/16 | 2 | |
| N20068 | S203-0.203-F2-S.3-Z2 | 13/64 | 3/8 | 7/16 | 2-5/16 | 2 | TiN |
| N20071 | S203-0.219-F2-S.3-Z2 | 7/32 | 3/8 | 1/2 | 2-5/16 | 2 | |
| N20070 | S203-0.219-F2-S.3-Z2 | 7/32 | 3/8 | 1/2 | 2-5/16 | 2 | TiN |
| N22071 | S203-0.219-F3-S.3-Z2 | 7/32 | 3/8 | 3/4 | 2-9/16 | 2 | |
| N22070 | S203-0.219-F3-S.3-Z2 | 7/32 | 3/8 | 3/4 | 2-9/16 | 2 | TiN |
| N23071 | S203-0.219-F4-S.3-Z2 | 7/32 | 3/8 | 7/8 | 2-11/16 | 2 | |
| N23070 | S203-0.219-F4-S.3-Z2 | 7/32 | 3/8 | 7/8 | 2-11/16 | 2 | TiN |
| N20079 | S203-0.234-F2-S.3-Z2 | 15/64 | 3/8 | 1/2 | 2-5/16 | 2 | |
| N20078 | S203-0.234-F2-S.3-Z2 | 15/64 | 3/8 | 1/2 | 2-5/16 | 2 | TiN |
| N21081 | S203-0.250-F1-S.3-Z2 | 1/4 | 3/8 | 1/4 | 2-1/16 | 2 | |
| N21080 | S203-0.250-F1-S.3-Z2 | 1/4 | 3/8 | 1/4 | 2-1/16 | 2 | TiN |
| N20081 | S203-0.250-F2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 2-5/16 | 2 | |
| N20080 | S203-0.250-F2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 2-5/16 | 2 | TiN |
| N22081 | S203-0.250-F3-S.3-Z2 | 1/4 | 3/8 | 3/4 | 2-5/8 | 2 | |
| N22080 | S203-0.250-F3-S.3-Z2 | 1/4 | 3/8 | 3/4 | 2-5/8 | 2 | TiN |
| N23081 | S203-0.250-F4-S.3-Z2 | 1/4 | 3/8 | 1 | 2-7/8 | 2 | |
| N23080 | S203-0.250-F4-S.3-Z2 | 1/4 | 3/8 | 1 | 2-7/8 | 2 | TiN |
| N20089 | S203-0.266-F2-S.3-Z2 | 17/64 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N20088 | S203-0.266-F2-S.3-Z2 | 17/64 | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N20091 | S203-0.281-F2-S.3-Z2 | 9/32 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N20090 | S203-0.281-F2-S.3-Z2 | 9/32 | 3/8 | 9/16 | 2-5/16 | 2 | TiN |

DISCOUNT CODE D40

# GENERAL PURPOSE- S203

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- 2 Flute
- Designed for slotting and pocketing in all materials
- Weldon flat standard

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N22091 | S203-0.281-F4-S.3-Z2 | 9/32 | 3/8 | 1 | 2-3/4 | 2 | |
| N22090 | S203-0.281-F4-S.3-Z2 | 9/32 | 3/8 | 1 | 2-3/4 | 2 | TiN |
| N23091 | S203-0.281-F5-S.3-Z2 | 9/32 | 3/8 | 1-3/8 | 3-1/8 | 2 | |
| N23090 | S203-0.281-F5-S.3-Z2 | 9/32 | 3/8 | 1-3/8 | 3-1/8 | 2 | TiN |
| N20101 | S203-0.313-F2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N20100 | S203-0.313-F2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N22101 | S203-0.313-F3-S.3-Z2 | 5/16 | 3/8 | 1 | 2-3/4 | 2 | |
| N22100 | S203-0.313-F3-S.3-Z2 | 5/16 | 3/8 | 1 | 2-3/4 | 2 | TiN |
| N23101 | S203-0.313-F4-S.3-Z2 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 2 | |
| N23100 | S203-0.313-F4-S.3-Z2 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 2 | TiN |
| N20109 | S203-0.328-F2-S.3-Z2 | 21/64 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N20108 | S203-0.328-F2-S.3-Z2 | 21/64 | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N20111 | S203-0.344-F2-S.3-Z2 | 11/32 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N20110 | S203-0.344-F2-S.3-Z2 | 11/32 | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N22111 | S203-0.344-F3-S.3-Z2 | 11/32 | 3/8 | 1-1/8 | 2-7/8 | 2 | |
| N22110 | S203-0.344-F3-S.3-Z2 | 11/32 | 3/8 | 1-1/8 | 2-7/8 | 2 | TiN |
| N23111 | S203-0.344-F4-S.3-Z2 | 11/32 | 3/8 | 1-1/2 | 3-1/4 | 2 | |
| N23110 | S203-0.344-F4-S.3-Z2 | 11/32 | 3/8 | 1-1/2 | 3-1/4 | 2 | TiN |
| N20119 | S203-0.359-F2-S.3-Z2 | 23/64 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N20118 | S203-0.359-F2-S.3-Z2 | 23/64 | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N20121 | S203-0.375-D2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N20120 | S203-0.375-D2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N22121 | S203-0.375-D3-S.3-Z2 | 3/8 | 3/8 | 1-1/8 | 2-7/8 | 2 | |
| N22120 | S203-0.375-D3-S.3-Z2 | 3/8 | 3/8 | 1-1/8 | 2-7/8 | 2 | TiN |
| N23121 | S203-0.375-D4-S.3-Z2 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 2 | |
| N23120 | S203-0.375-D4-S.3-Z2 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 2 | TiN |
| N20129 | S203-0.391-P2-S.3-Z2 | 25/64 | 3/8 | 13/16 | 2-1/2 | 2 | |
| N20128 | S203-0.391-P2-S.3-Z2 | 25/64 | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N20131 | S203-0.406-P2-S.3-Z2 | 13/32 | 3/8 | 13/16 | 2-1/2 | 2 | |
| N20130 | S203-0.406-P2-S.3-Z2 | 13/32 | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N22131 | S203-0.406-P3-S.3-Z2 | 13/32 | 3/8 | 1-3/8 | 3-1/16 | 2 | |
| N22130 | S203-0.406-P3-S.3-Z2 | 13/32 | 3/8 | 1-3/8 | 3-1/16 | 2 | TiN |
| N20139 | S203-0.422-P2-S.3-Z2 | 27/64 | 3/8 | 13/16 | 2-1/2 | 2 | |
| N20138 | S203-0.422-P2-S.3-Z2 | 27/64 | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N20141 | S203-0.438-P2-S.3-Z2 | 7/16 | 3/8 | 13/16 | 2-1/2 | 2 | |
| N20140 | S203-0.438-P2-S.3-Z2 | 7/16 | 3/8 | 13/16 | 2-1/2 | 2 | TiN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- S203

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- 2 Flute
- Designed for slotting and pocketing in all materials
- Weldon flat standard

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N22141 | S203-0.438-P3-S.3-Z2 | 7/16 | 3/8 | 1-3/8 | 3-1/16 | 2 | |
| N22140 | S203-0.438-P3-S.3-Z2 | 7/16 | 3/8 | 1-3/8 | 3-1/16 | 2 | TiN |
| N23141 | S203-0.438-P5-S.3-Z2 | 7/16 | 3/8 | 2 | 3-11/16 | 2 | |
| N23140 | S203-0.438-P5-S.3-Z2 | 7/16 | 3/8 | 2 | 3-11/16 | 2 | TiN |
| N20149 | S203-0.453-P2-S.3-Z2 | 29/64 | 3/8 | 13/16 | 2-1/2 | 2 | |
| N20148 | S203-0.453-P2-S.3-Z2 | 29/64 | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N20151 | S203-0.469-P2-S.3-Z2 | 15/32 | 3/8 | 13/16 | 2-1/2 | 2 | |
| N20150 | S203-0.469-P2-S.3-Z2 | 15/32 | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N20159 | S203-0.484-P2-S.3-Z2 | 31/64 | 3/8 | 13/16 | 2-1/2 | 2 | |
| N20158 | S203-0.484-P2-S.3-Z2 | 31/64 | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N20161 | S203-0.500-P2-S.3-Z2 | 1/2 | 3/8 | 13/16 | 2-1/2 | 2 | |
| N20167 | S203-0.500-P2-S.3-Z2 | 1/2 | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N21162 | S203-0.500-D1-S.3-Z2 | 1/2 | 1/2 | 1/2 | 2-1/2 | 2 | |
| N21160 | S203-0.500-D1-S.3-Z2 | 1/2 | 1/2 | 1/2 | 2-1/2 | 2 | TiN |
| N20162 | S203-0.500-D2-S.3-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | |
| N20160 | S203-0.500-D2-S.3-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiN |
| N22162 | S203-0.500-D3-S.3-Z2 | 1/2 | 1/2 | 1-1/2 | 3-1/2 | 2 | |
| N22160 | S203-0.500-D3-S.3-Z2 | 1/2 | 1/2 | 1-1/2 | 3-1/2 | 2 | TiN |
| N23162 | S203-0.500-D4-S.3-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | |
| N23160 | S203-0.500-D4-S.3-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiN |
| N20169 | S203-0.516-P2-S.3-Z2 | 33/64 | 1/2 | 1 | 3 | 2 | |
| N20168 | S203-0.516-P2-S.3-Z2 | 33/64 | 1/2 | 1 | 3 | 2 | TiN |
| N20172 | S203-0.531-P2-S.3-Z2 | 17/32 | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N20170 | S203-0.531-P2-S.3-Z2 | 17/32 | 1/2 | 1-1/8 | 3-1/8 | 2 | TiN |
| N22172 | S203-0.531-P4-S.3-Z2 | 17/32 | 1/2 | 1-7/8 | 3-7/8 | 2 | |
| N22170 | S203-0.531-P4-S.3-Z2 | 17/32 | 1/2 | 1-7/8 | 3-7/8 | 2 | TiN |
| N20179 | S203-0.547-P2-S.3-Z2 | 35/64 | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N20178 | S203-0.547-P2-S.3-Z2 | 35/64 | 1/2 | 1-1/8 | 3-1/8 | 2 | TiN |
| N20182 | S203-0.563-P2-S.3-Z2 | 9/16 | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N20180 | S203-0.563-P2-S.3-Z2 | 9/16 | 1/2 | 1-1/8 | 3-1/8 | 2 | TiN |
| N22182 | S203-0.563-P3-S.3-Z2 | 9/16 | 1/2 | 1-7/8 | 3-7/8 | 2 | |
| N22180 | S203-0.563-P3-S.3-Z2 | 9/16 | 1/2 | 1-7/8 | 3-7/8 | 2 | TiN |
| N23182 | S203-0.563-P4-S.3-Z2 | 9/16 | 1/2 | 2-1/2 | 4-1/2 | 2 | |
| N23180 | S203-0.563-P4-S.3-Z2 | 9/16 | 1/2 | 2-1/2 | 4-1/2 | 2 | TiN |
| N20189 | S203-0.578-P2-S.3-Z2 | 37/64 | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N20188 | S203-0.578-P2-S.3-Z2 | 37/64 | 1/2 | 1-1/8 | 3-1/8 | 2 | TiN |

DISCOUNT CODE D40

# GENERAL PURPOSE- S203

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- 2 Flute
- Designed for slotting and pocketing in all materials
- Weldon flat standard

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N20192 | S203-0.594-P2-S.3-Z2 | 19/32 | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N20190 | S203-0.594-P2-S.3-Z2 | 19/32 | 1/2 | 1-1/8 | 3-1/8 | 2 | TiN |
| N20199 | S203-0.609-F2-S.3-Z2 | 39/64 | 5/8 | 1-5/16 | 3-7/16 | 2 | |
| N20198 | S203-0.609-F2-S.3-Z2 | 39/64 | 5/8 | 1-5/16 | 3-7/16 | 2 | TiN |
| N20202 | S203-0.625-P2-S.3-Z2 | 5/8 | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N20207 | S203-0.625-P2-S.3-Z2 | 5/8 | 1/2 | 1-1/8 | 3-1/8 | 2 | TiN |
| N21203 | S203-0.625-D1-S.3-Z2 | 5/8 | 5/8 | 5/8 | 2-3/4 | 2 | |
| N21200 | S203-0.625-D1-S.3-Z2 | 5/8 | 5/8 | 5/8 | 2-3/4 | 2 | TiN |
| N20203 | S203-0.625-D2-S.3-Z2 | 5/8 | 5/8 | 1-5/16 | 3-7/16 | 2 | |
| N20200 | S203-0.625-D2-S.3-Z2 | 5/8 | 5/8 | 1-5/16 | 3-7/16 | 2 | TiN |
| N22204 | S203-0.625-D3-S.3-Z2 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 2 | |
| N22201 | S203-0.625-D3-S.3-Z2 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 2 | TiN |
| N22203 | S203-0.625-D4-S.3-Z2 | 5/8 | 5/8 | 1-7/8 | 4 | 2 | |
| N22200 | S203-0.625-D4-S.3-Z2 | 5/8 | 5/8 | 1-7/8 | 4 | 2 | TiN |
| N23204 | S203-0.625-D5-S.3-Z2 | 5/8 | 5/8 | 2 | 4-1/8 | 2 | |
| N23201 | S203-0.625-D5-S.3-Z2 | 5/8 | 5/8 | 2 | 4-1/8 | 2 | TiN |
| N23203 | S203-0.625-D6-S.3-Z2 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 2 | |
| N23200 | S203-0.625-D6-S.3-Z2 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 2 | TiN |
| N20209 | S203-0.641-P2-S.3-Z2 | 41/64 | 5/8 | 1-5/16 | 3-7/16 | 2 | |
| N20208 | S203-0.641-P2-S.3-Z2 | 41/64 | 5/8 | 1-5/16 | 3-7/16 | 2 | TiN |
| N20213 | S203-0.656-P2-S.3-Z2 | 21/32 | 5/8 | 1-5/16 | 3-7/16 | 2 | |
| N20210 | S203-0.656-P2-S.3-Z2 | 21/32 | 5/8 | 1-5/16 | 3-7/16 | 2 | TiN |
| N20222 | S203-0.688-P2-S.3-Z2 | 11/16 | 1/2 | 1-5/16 | 3-5/16 | 2 | |
| N20227 | S203-0.688-P2-S.3-Z2 | 11/16 | 1/2 | 1-5/16 | 3-5/16 | 2 | TiN |
| N22222 | S203-0.688-P3-S.3-Z2 | 11/16 | 1/2 | 1-5/8 | 3-5/8 | 2 | |
| N22221 | S203-0.688-P3-S.3-Z2 | 11/16 | 1/2 | 1-5/8 | 3-5/8 | 2 | TiN |
| N20223 | S203-0.688-P5-S.3-Z2 | 11/16 | 5/8 | 1-5/16 | 3-7/16 | 2 | |
| N20220 | S203-0.688-P5-S.3-Z2 | 11/16 | 5/8 | 1-5/16 | 3-7/16 | 2 | TiN |
| N20229 | S203-0.703-F2-S.3-Z2 | 45/64 | 3/4 | 1-5/16 | 3-9/16 | 2 | |
| N20228 | S203-0.703-F2-S.3-Z2 | 45/64 | 3/4 | 1-5/16 | 3-9/16 | 2 | TiN |
| N20234 | S203-0.719-F2-S.3-Z2 | 23/32 | 3/4 | 1-5/16 | 3-9/16 | 2 | |
| N20230 | S203-0.719-F2-S.3-Z2 | 23/32 | 3/4 | 1-5/16 | 3-9/16 | 2 | TiN |
| N20242 | S203-0.750-P1-S.3-Z2 | 3/4 | 1/2 | 1-5/16 | 3-5/16 | 2 | |
| N20241 | S203-0.750-P1-S.3-Z2 | 3/4 | 1/2 | 1-5/16 | 3-5/16 | 2 | TiN |
| N20243 | S203-0.750-P2-S.3-Z2 | 3/4 | 5/8 | 1-5/16 | 3-7/16 | 2 | |
| N20247 | S203-0.750-P2-S.3-Z2 | 3/4 | 5/8 | 1-5/16 | 3-7/16 | 2 | TiN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- S203

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- 2 Flute
- Designed for slotting and pocketing in all materials
- Weldon flat standard

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N20244 | S203-0.750-D2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 3-9/16 | 2 | |
| N20240 | S203-0.750-D2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 3-9/16 | 2 | TiN |
| N22245 | S203-0.750-D3-S.3-Z2 | 3/4 | 3/4 | 1-3/4 | 4 | 2 | |
| N22241 | S203-0.750-D3-S.3-Z2 | 3/4 | 3/4 | 1-3/4 | 4 | 2 | TiN |
| N22244 | S203-0.750-D4-S.3-Z2 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 2 | |
| N22240 | S203-0.750-D4-S.3-Z2 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 2 | TiN |
| N23244 | S203-0.750-D5-S.3-Z2 | 3/4 | 3/4 | 3 | 5-1/4 | 2 | |
| N23240 | S203-0.750-D5-S.3-Z2 | 3/4 | 3/4 | 3 | 5-1/4 | 2 | TiN |
| N20249 | S203-0.766-P2-S.3-Z2 | 49/64 | 3/4 | 1-1/2 | 3-3/4 | 2 | |
| N20248 | S203-0.766-P2-S.3-Z2 | 49/64 | 3/4 | 1-1/2 | 3-3/4 | 2 | TiN |
| N20254 | S203-0.781-P2-S.3-Z2 | 25/32 | 3/4 | 1-1/2 | 3-3/4 | 2 | |
| N20250 | S203-0.781-P2-S.3-Z2 | 25/32 | 3/4 | 1-1/2 | 3-3/4 | 2 | TiN |
| N20263 | S203-0.813-P2-S.3-Z2 | 13/16 | 5/8 | 1-1/2 | 3-5/8 | 2 | |
| N20267 | S203-0.813-P2-S.3-Z2 | 13/16 | 5/8 | 1-1/2 | 3-5/8 | 2 | TiN |
| N20264 | S203-0.813-P3-S.3-Z2 | 13/16 | 3/4 | 1-1/2 | 3-3/4 | 2 | |
| N20260 | S203-0.813-P3-S.3-Z2 | 13/16 | 3/4 | 1-1/2 | 3-3/4 | 2 | TiN |
| N22264 | S203-0.813-P4-S.3-Z2 | 13/16 | 3/4 | 2-5/8 | 4-7/8 | 2 | |
| N22260 | S203-0.813-P4-S.3-Z2 | 13/16 | 3/4 | 2-5/8 | 4-7/8 | 2 | TiN |
| N20283 | S203-0.875-P2-S.3-Z2 | 7/8 | 5/8 | 1-1/2 | 3-5/8 | 2 | |
| N20281 | S203-0.875-P2-S.3-Z2 | 7/8 | 5/8 | 1-1/2 | 3-5/8 | 2 | TiN |
| N20284 | S203-0.875-P3-S.3-Z2 | 7/8 | 3/4 | 1-1/2 | 3-3/4 | 2 | |
| N20287 | S203-0.875-P3-S.3-Z2 | 7/8 | 3/4 | 1-1/2 | 3-3/4 | 2 | TiN |
| N20285 | S203-0.875-D2-S.3-Z2 | 7/8 | 7/8 | 1-1/2 | 3-3/4 | 2 | |
| N20280 | S203-0.875-D2-S.3-Z2 | 7/8 | 7/8 | 1-1/2 | 3-3/4 | 2 | TiN |
| N22286 | S203-0.875-D3-S.3-Z2 | 7/8 | 7/8 | 2 | 4-1/4 | 2 | |
| N22281 | S203-0.875-D3-S.3-Z2 | 7/8 | 7/8 | 2 | 4-1/4 | 2 | TiN |
| N23285 | S203-0.875-D6-S.3-Z2 | 7/8 | 7/8 | 3-1/2 | 5-3/4 | 2 | |
| N23280 | S203-0.875-D6-S.3-Z2 | 7/8 | 7/8 | 3-1/2 | 5-3/4 | 2 | TiN |
| N20304 | S203-0.938-P2-S.3-Z2 | 15/16 | 3/4 | 1-1/2 | 3-3/4 | 2 | |
| N20303 | S203-0.938-P2-S.3-Z2 | 15/16 | 3/4 | 1-1/2 | 3-3/4 | 2 | TiN |
| N20305 | S203-0.938-P3-S.3-Z2 | 15/16 | 7/8 | 1-5/8 | 3-7/8 | 2 | |
| N20300 | S203-0.938-P3-S.3-Z2 | 15/16 | 7/8 | 1-5/8 | 3-7/8 | 2 | TiN |
| N20323 | S203-1.000-P1-S.3-Z2 | 1 | 5/8 | 1-1/2 | 3-5/8 | 2 | |
| N20322 | S203-1.000-P1-S.3-Z2 | 1 | 5/8 | 1-1/2 | 3-5/8 | 2 | TiN |
| N20324 | S203-1.000-P2-S.3-Z2 | 1 | 3/4 | 1-1/2 | 3-3/4 | 2 | |
| N20321 | S203-1.000-P2-S.3-Z2 | 1 | 3/4 | 1-1/2 | 3-3/4 | 2 | TiN |

DISCOUNT CODE D40

# GENERAL PURPOSE- S203

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- 2 Flute
- Designed for slotting and pocketing in all materials
- Weldon flat standard

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N20326 | S203-1.000-D2-S.3-Z2 | 1 | 1 | 1-5/8 | 4-1/8 | 2 | |
| N20320 | S203-1.000-D2-S.3-Z2 | 1 | 1 | 1-5/8 | 4-1/8 | 2 | TiN |
| N22327 | S203-1.000-D3-S.3-Z2 | 1 | 1 | 2-1/4 | 4-3/4 | 2 | |
| N22321 | S203-1.000-D3-S.3-Z2 | 1 | 1 | 2-1/4 | 4-3/4 | 2 | TiN |
| N22326 | S203-1.000-D4-S.3-Z2 | 1 | 1 | 3 | 5-1/2 | 2 | |
| N22320 | S203-1.000-D4-S.3-Z2 | 1 | 1 | 3 | 5-1/2 | 2 | TiN |
| N23326 | S203-1.000-D5-S.3-Z2 | 1 | 1 | 4 | 6-1/2 | 2 | |
| N23320 | S203-1.000-D5-S.3-Z2 | 1 | 1 | 4 | 6-1/2 | 2 | TiN |
| N20344 | S203-1.063-P1-S.3-Z2 | 1-1/16 | 3/4 | 1-1/2 | 3-3/4 | 2 | |
| N20348 | S203-1.063-P1-S.3-Z2 | 1-1/16 | 3/4 | 1-1/2 | 3-3/4 | 2 | TiN |
| N20346 | S203-1.063-P2-S.3-Z2 | 1-1/16 | 1 | 1-5/8 | 4-1/8 | 2 | |
| N20340 | S203-1.063-P2-S.3-Z2 | 1-1/16 | 1 | 1-5/8 | 4-1/8 | 2 | TiN |
| N20364 | S203-1.125-P1-S.3-Z2 | 1-1/8 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N20361 | S203-1.125-P1-S.3-Z2 | 1-1/8 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N20366 | S203-1.125-P3-S.3-Z2 | 1-1/8 | 1 | 1-5/8 | 4-1/8 | 2 | |
| N20360 | S203-1.125-P3-S.3-Z2 | 1-1/8 | 1 | 1-5/8 | 4-1/8 | 2 | TiN |
| N20384 | S203-1.188-P1-S.3-Z2 | 1-3/16 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N20381 | S203-1.188-P1-S.3-Z2 | 1-3/16 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N20386 | S203-1.188-P2-S.3-Z2 | 1-3/16 | 1 | 1-5/8 | 4-1/8 | 2 | |
| N20380 | S203-1.188-P2-S.3-Z2 | 1-3/16 | 1 | 1-5/8 | 4-1/8 | 2 | TiN |
| N20404 | S203-1.250-P1-S.3-Z2 | 1-1/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N20402 | S203-1.250-P1-S.3-Z2 | 1-1/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N20406 | S203-1.250-P3-S.3-Z2 | 1-1/4 | 1 | 1-5/8 | 4-1/8 | 2 | |
| N20401 | S203-1.250-P3-S.3-Z2 | 1-1/4 | 1 | 1-5/8 | 4-1/8 | 2 | TiN |
| N20407 | S203-1.250-D1-S.3-Z2 | 1-1/4 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | |
| N20400 | S203-1.250-D1-S.3-Z2 | 1-1/4 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | TiN |
| N20426 | S203-1.313-P1-S.3-Z2 | 1-5/16 | 1 | 1-5/8 | 4-1/8 | 2 | |
| N20420 | S203-1.313-P1-S.3-Z2 | 1-5/16 | 1 | 1-5/8 | 4-1/8 | 2 | TiN |
| N20444 | S203-1.375-P1-S.3-Z2 | 1-3/8 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N20448 | S203-1.375-P1-S.3-Z2 | 1-3/8 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N20446 | S203-1.375-P2-S.3-Z2 | 1-3/8 | 1 | 1-5/8 | 4-1/8 | 2 | |
| N20440 | S203-1.375-P2-S.3-Z2 | 1-3/8 | 1 | 1-5/8 | 4-1/8 | 2 | TiN |
| N20484 | S203-1.500-P1-S.3-Z2 | 1-1/2 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N20482 | S203-1.500-P1-S.3-Z2 | 1-1/2 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N20486 | S203-1.500-P2-S.3-Z2 | 1-1/2 | 1 | 1-5/8 | 4-1/8 | 2 | |

# GENERAL PURPOSE- S203

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- 2 Flute
- Designed for slotting and pocketing in all materials
- Weldon flat standard

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N20481 | S203-1.500-P2-S.3-Z2 | 1-1/2 | 1 | 1-5/8 | 4-1/8 | 2 | TiN |
| N20487 | S203-1.500-P3-S.3-Z2 | 1-1/2 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | |
| N20480 | S203-1.500-P3-S.3-Z2 | 1-1/2 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | TiN |
| N20527 | S203-1.625-P1-S.3-Z2 | 1-5/8 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | |
| N20520 | S203-1.625-P1-S.3-Z2 | 1-5/8 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | TiN |
| N20564 | S203-1.750-P1-S.3-Z2 | 1-3/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N20563 | S203-1.750-P1-S.3-Z2 | 1-3/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N20567 | S203-1.750-P2-S.3-Z2 | 1-3/4 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | |
| N20560 | S203-1.750-P2-S.3-Z2 | 1-3/4 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | TiN |
| N20644 | S203-2.000-P1-S.3-Z2 | 2 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N20643 | S203-2.000-P1-S.3-Z2 | 2 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N20647 | S203-2.000-P2-S.3-Z2 | 2 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | |
| N20640 | S203-2.000-P2-S.3-Z2 | 2 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | TiN |
| N22646 | S203-2.000-P3-S.3-Z2 | 2 | 1-1/4 | 2-1/4 | 4-3/4 | 2 | |
| N22642 | S203-2.000-P3-S.3-Z2 | 2 | 1-1/4 | 2-1/4 | 4-3/4 | 2 | TiN |
| N22647 | S203-2.000-P4-S.3-Z2 | 2 | 1-1/4 | 3 | 5-1/2 | 2 | |
| N22640 | S203-2.000-P4-S.3-Z2 | 2 | 1-1/4 | 3 | 5-1/2 | 2 | TiN |

# GENERAL PURPOSE- SK204

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Keyway tolerance = Flute Dia: +0 / - .0015”
- Designed for all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N82045 | SK204-0.125-F3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 2-5/16 | 2 | |
| N82040 | SK204-0.125-F3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 2-5/16 | 2 | TiN |
| N82065 | SK204-0.188-F2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 2-5/16 | 2 | |
| N82060 | SK204-0.188-F2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 2-5/16 | 2 | TiN |
| N82085 | SK204-0.250-F2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 2-5/16 | 2 | |
| N82080 | SK204-0.250-F2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 2-5/16 | 2 | TiN |
| N82105 | SK204-0.313-F2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N82100 | SK204-0.313-F2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N82125 | SK204-0.375-D2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N82120 | SK204-0.375-D2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N82145 | SK204-0.438-P2-S.3-Z2 | 7/16 | 3/8 | 13/16 | 2-1/2 | 2 | |
| N82140 | SK204-0.438-P2-S.3-Z2 | 7/16 | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N82165 | SK204-0.500-D2-S.3-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | |
| N82160 | SK204-0.500-D2-S.3-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiN |
| N82205 | SK204-0.625-D2-S.3-Z2 | 5/8 | 5/8 | 1-5/16 | 3-7/16 | 2 | |
| N82200 | SK204-0.625-D2-S.3-Z2 | 5/8 | 5/8 | 1-5/16 | 3-7/16 | 2 | TiN |
| N82245 | SK204-0.750-D2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 3-9/16 | 2 | |
| N82240 | SK204-0.750-D2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 3-9/16 | 2 | TiN |
| N82285 | SK204-0.875-D2-S.3-Z2 | 7/8 | 7/8 | 1-1/2 | 3-3/4 | 2 | |
| N82280 | SK204-0.875-D2-S.3-Z2 | 7/8 | 7/8 | 1-1/2 | 3-3/4 | 2 | TiN |
| N82325 | SK204-1.000-D2-S.3-Z2 | 1 | 1 | 1-5/8 | 4-1/8 | 2 | |
| N82320 | SK204-1.000-D2-S.3-Z2 | 1 | 1 | 1-5/8 | 4-1/8 | 2 | TiN |

# GENERAL PURPOSE- SB207

HSS
HIGH SPEED STEEL

HELIX
30°

BALL END

CENTER CUTTING

- Weldon flat standard
- Designed for slotting, pocketing and contour milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N24041 | SB207-0.125-F3-B.3-Z2 | 1/8 | 3/8 | 3/8 | 2-5/16 | 2 | |
| N24040 | SB207-0.125-F3-B.3-Z2 | 1/8 | 3/8 | 3/8 | 2-5/16 | 2 | TiN |
| N24061 | SB207-0.188-F3-B.3-Z2 | 3/16 | 3/8 | 1/2 | 2-3/8 | 2 | |
| N24060 | SB207-0.188-F3-B.3-Z2 | 3/16 | 3/8 | 1/2 | 2-3/8 | 2 | TiN |
| N24081 | SB207-0.250-F3-B.3-Z2 | 1/4 | 3/8 | 5/8 | 2-7/16 | 2 | |
| N24080 | SB207-0.250-F3-B.3-Z2 | 1/4 | 3/8 | 5/8 | 2-7/16 | 2 | TiN |
| N24101 | SB207-0.313-F2-B.3-Z2 | 5/16 | 3/8 | 3/4 | 2-1/2 | 2 | |
| N24100 | SB207-0.313-F2-B.3-Z2 | 5/16 | 3/8 | 3/4 | 2-1/2 | 2 | TiN |
| N24121 | SB207-0.375-D2-B.3-Z2 | 3/8 | 3/8 | 3/4 | 2-1/2 | 2 | |
| N24120 | SB207-0.375-D2-B.3-Z2 | 3/8 | 3/8 | 3/4 | 2-1/2 | 2 | TiN |
| N24142 | SB207-0.438-F2-B.3-Z2 | 7/16 | 1/2 | 1 | 3 | 2 | |
| N24140 | SB207-0.438-F2-B.3-Z2 | 7/16 | 1/2 | 1 | 3 | 2 | TiN |
| N24143 | SB207-0.438-F4-B.3-Z2 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 2 | |
| N24148 | SB207-0.438-F4-B.3-Z2 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 2 | TiN |
| N24162 | SB207-0.500-D2-B.3-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | |
| N24160 | SB207-0.500-D2-B.3-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiN |
| N24182 | SB207-0.563-P2-B.3-Z2 | 9/16 | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N24180 | SB207-0.563-P2-B.3-Z2 | 9/16 | 1/2 | 1-1/8 | 3-1/8 | 2 | TiN |
| N24202 | SB207-0.625-P2-B.3-Z2 | 5/8 | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N24208 | SB207-0.625-P2-B.3-Z2 | 5/8 | 1/2 | 1-1/8 | 3-1/8 | 2 | TiN |
| N24203 | SB207-0.625-D2-B.3-Z2 | 5/8 | 5/8 | 1-3/8 | 3-1/2 | 2 | |
| N24200 | SB207-0.625-D2-B.3-Z2 | 5/8 | 5/8 | 1-3/8 | 3-1/2 | 2 | TiN |
| N24223 | SB207-0.688-P2-B.3-Z2 | 11/16 | 5/8 | 1-3/8 | 3-1/2 | 2 | |
| N24220 | SB207-0.688-P2-B.3-Z2 | 11/16 | 5/8 | 1-3/8 | 3-1/2 | 2 | TiN |
| N24242 | SB207-0.750-P2-B.3-Z2 | 3/4 | 1/2 | 1-5/16 | 3-5/16 | 2 | |
| N24248 | SB207-0.750-P2-B.3-Z2 | 3/4 | 1/2 | 1-5/16 | 3-5/16 | 2 | TiN |
| N24244 | SB207-0.750-D2-B.3-Z2 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N24240 | SB207-0.750-D2-B.3-Z2 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N24264 | SB207-0.813-P2-B.3-Z2 | 13/16 | 3/4 | 2 | 4-1/4 | 2 | |
| N24260 | SB207-0.813-P2-B.3-Z2 | 13/16 | 3/4 | 2 | 4-1/4 | 2 | TiN |
| N24284 | SB207-0.875-P2-B.3-Z2 | 7/8 | 3/4 | 2 | 4-1/4 | 2 | |
| N24288 | SB207-0.875-P2-B.3-Z2 | 7/8 | 3/4 | 2 | 4-1/4 | 2 | TiN |
| N24285 | SB207-0.875-D2-B.3-Z2 | 7/8 | 7/8 | 2 | 4-1/4 | 2 | |
| N24280 | SB207-0.875-D2-B.3-Z2 | 7/8 | 7/8 | 2 | 4-1/4 | 2 | TiN |
| N24304 | SB207-0.938-P2-B.3-Z2 | 15/16 | 3/4 | 2-1/4 | 4-1/2 | 2 | |

# GENERAL PURPOSE- SB207

HSS
HIGH SPEED STEEL

HELIX
30°

BALL END

CENTER CUTTING

- Weldon flat standard
- Designed for slotting, pocketing and contour milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N24300 | SB207-0.938-P2-B.3-Z2 | 15/16 | 3/4 | 2-1/4 | 4-1/2 | 2 | TiN |
| N24324 | SB207-1.000-P2-B.3-Z2 | 1 | 3/4 | 2-1/4 | 4-1/2 | 2 | |
| N24328 | SB207-1.000-P2-B.3-Z2 | 1 | 3/4 | 2-1/4 | 4-1/2 | 2 | TiN |
| N24326 | SB207-1.000-D2-B.3-Z2 | 1 | 1 | 2-1/4 | 4-3/4 | 2 | |
| N24320 | SB207-1.000-D2-B.3-Z2 | 1 | 1 | 2-1/4 | 4-3/4 | 2 | TiN |
| N24364 | SB207-1.125-P1-B.3-Z2 | 1-1/8 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N24368 | SB207-1.125-P1-B.3-Z2 | 1-1/8 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N24404 | SB207-1.250-P1-B.3-Z2 | 1-1/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N24408 | SB207-1.250-P1-B.3-Z2 | 1-1/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N24444 | SB207-1.375-P1-B.3-Z2 | 1-3/8 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N24440 | SB207-1.375-P1-B.3-Z2 | 1-3/8 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N24484 | SB207-1.500-P1-B.3-Z2 | 1-1/2 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N24488 | SB207-1.500-P1-B.3-Z2 | 1-1/2 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiN |
| N24487 | SB207-1.500-P2-B.3-Z2 | 1-1/2 | 1-1/4 | 2-1/2 | 5 | 2 | |
| N24480 | SB207-1.500-P2-B.3-Z2 | 1-1/2 | 1-1/4 | 2-1/2 | 5 | 2 | TiN |
| N24567 | SB207-1.750-P1-B.3-Z2 | 1-3/4 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | |
| N24560 | SB207-1.750-P1-B.3-Z2 | 1-3/4 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | TiN |
| N24647 | SB207-2.000-P1-B.3-Z2 | 2 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | |
| N24640 | SB207-2.000-P1-B.3-Z2 | 2 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | TiN |

# GENERAL PURPOSE- D201

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for slotting and pocketing in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N28039 | D201-0.109-XF3-S.3-Z2 | 7/64 | 3/8 | 3/8 | 3-1/16 | 2 | |
| N28038 | D201-0.109-XF3-S.3-Z2 | 7/64 | 3/8 | 3/8 | 3-1/16 | 2 | TiN |
| N28041 | D201-0.125-XF3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 3-1/16 | 2 | |
| N28040 | D201-0.125-XF3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 3-1/16 | 2 | TiN |
| N28049 | D201-0.141-XF3-S.3-Z2 | 9/64 | 3/8 | 7/16 | 3-1/8 | 2 | |
| N28048 | D201-0.141-XF3-S.3-Z2 | 9/64 | 3/8 | 7/16 | 3-1/8 | 2 | TiN |
| N28051 | D201-0.156-XF3-S.3-Z2 | 5/32 | 3/8 | 7/16 | 3-1/8 | 2 | |
| N28050 | D201-0.156-XF3-S.3-Z2 | 5/32 | 3/8 | 7/16 | 3-1/8 | 2 | TiN |
| N28059 | D201-0.172-XF3-S.3-Z2 | 11/64 | 3/8 | 7/16 | 3-1/8 | 2 | |
| N28058 | D201-0.172-XF3-S.3-Z2 | 11/64 | 3/8 | 7/16 | 3-1/8 | 2 | TiN |
| N28061 | D201-0.188-XF2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 3-1/8 | 2 | |
| N28060 | D201-0.188-XF2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 3-1/8 | 2 | TiN |
| N28069 | D201-0.203-XF2-S.3-Z2 | 13/64 | 3/8 | 1/2 | 3-1/8 | 2 | |
| N28068 | D201-0.203-XF2-S.3-Z2 | 13/64 | 3/8 | 1/2 | 3-1/8 | 2 | TiN |
| N28071 | D201-0.219-XF2-S.3-Z2 | 7/32 | 3/8 | 1/2 | 3-1/8 | 2 | |
| N28070 | D201-0.219-XF2-S.3-Z2 | 7/32 | 3/8 | 1/2 | 3-1/8 | 2 | TiN |
| N28079 | D201-0.234-XF2-S.3-Z2 | 15/64 | 3/8 | 1/2 | 3-1/8 | 2 | |
| N28078 | D201-0.234-XF2-S.3-Z2 | 15/64 | 3/8 | 1/2 | 3-1/8 | 2 | TiN |
| N28081 | D201-0.250-XF2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 3-1/8 | 2 | |
| N28080 | D201-0.250-XF2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 3-1/8 | 2 | TiN |
| N28089 | D201-0.266-XF2-S.3-Z2 | 17/64 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N28088 | D201-0.266-XF2-S.3-Z2 | 17/64 | 3/8 | 9/16 | 3-1/8 | 2 | TiN |
| N28091 | D201-0.281-XF2-S.3-Z2 | 9/32 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N28090 | D201-0.281-XF2-S.3-Z2 | 9/32 | 3/8 | 9/16 | 3-1/8 | 2 | TiN |
| N28099 | D201-0.297-XF2-S.3-Z2 | 19/64 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N28098 | D201-0.297-XF2-S.3-Z2 | 19/64 | 3/8 | 9/16 | 3-1/8 | 2 | TiN |
| N28101 | D201-0.313-XF2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N28100 | D201-0.313-XF2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 3-1/8 | 2 | TiN |
| N28109 | D201-0.328-XF2-S.3-Z2 | 21/64 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N28108 | D201-0.328-XF2-S.3-Z2 | 21/64 | 3/8 | 9/16 | 3-1/8 | 2 | TiN |
| N28111 | D201-0.344-XF2-S.3-Z2 | 11/32 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N28110 | D201-0.344-XF2-S.3-Z2 | 11/32 | 3/8 | 9/16 | 3-1/8 | 2 | TiN |
| N28121 | D201-0.375-XD2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N28120 | D201-0.375-XD2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 3-1/8 | 2 | TiN |
| N28129 | D201-0.391-XF2-S.3-Z2 | 25/64 | 1/2 | 13/16 | 3-3/4 | 2 | |

# GENERAL PURPOSE- D201

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for slotting and pocketing in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N28128 | D201-0.391-XF2-S.3-Z2 | 25/64 | 1/2 | 13/16 | 3-3/4 | 2 | TiN |
| N28132 | D201-0.406-XF2-S.3-Z2 | 13/32 | 1/2 | 13/16 | 3-3/4 | 2 | |
| N28130 | D201-0.406-XF2-S.3-Z2 | 13/32 | 1/2 | 13/16 | 3-3/4 | 2 | TiN |
| N28139 | D201-0.422-XF2-S.3-Z2 | 27/64 | 1/2 | 13/16 | 3-3/4 | 2 | |
| N28138 | D201-0.422-XF2-S.3-Z2 | 27/64 | 1/2 | 13/16 | 3-3/4 | 2 | TiN |
| N28142 | D201-0.438-XF2-S.3-Z2 | 7/16 | 1/2 | 13/16 | 3-3/4 | 2 | |
| N28140 | D201-0.438-XF2-S.3-Z2 | 7/16 | 1/2 | 13/16 | 3-3/4 | 2 | TiN |
| N28152 | D201-0.469-XF2-S.3-Z2 | 15/32 | 1/2 | 13/16 | 3-3/4 | 2 | |
| N28150 | D201-0.469-XF2-S.3-Z2 | 15/32 | 1/2 | 13/16 | 3-3/4 | 2 | TiN |
| N28162 | D201-0.500-XD2-S.3-Z2 | 1/2 | 1/2 | 13/16 | 3-3/4 | 2 | |
| N28160 | D201-0.500-XD2-S.3-Z2 | 1/2 | 1/2 | 13/16 | 3-3/4 | 2 | TiN |
| N28173 | D201-0.531-XF2-S.3-Z2 | 17/32 | 5/8 | 1-1/8 | 4-1/2 | 2 | |
| N28170 | D201-0.531-XF2-S.3-Z2 | 17/32 | 5/8 | 1-1/8 | 4-1/2 | 2 | TiN |
| N28183 | D201-0.563-XF2-S.3-Z2 | 9/16 | 5/8 | 1-1/8 | 4-1/2 | 2 | |
| N28180 | D201-0.563-XF2-S.3-Z2 | 9/16 | 5/8 | 1-1/8 | 4-1/2 | 2 | TiN |
| N28203 | D201-0.625-XD2-S.3-Z2 | 5/8 | 5/8 | 1-1/8 | 4-1/2 | 2 | |
| N28200 | D201-0.625-XD2-S.3-Z2 | 5/8 | 5/8 | 1-1/8 | 4-1/2 | 2 | TiN |
| N28224 | D201-0.688-XF2-S.3-Z2 | 11/16 | 3/4 | 1-5/16 | 5 | 2 | |
| N28220 | D201-0.688-XF2-S.3-Z2 | 11/16 | 3/4 | 1-5/16 | 5 | 2 | TiN |
| N28244 | D201-0.750-XD2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 5 | 2 | |
| N28240 | D201-0.750-XD2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 5 | 2 | TiN |
| N28265 | D201-0.813-XF2-S.3-Z2 | 13/16 | 7/8 | 1-9/16 | 5-1/2 | 2 | |
| N28260 | D201-0.813-XF2-S.3-Z2 | 13/16 | 7/8 | 1-9/16 | 5-1/2 | 2 | TiN |
| N28285 | D201-0.875-XD2-S.3-Z2 | 7/8 | 7/8 | 1-9/16 | 5-1/2 | 2 | |
| N28280 | D201-0.875-XD2-S.3-Z2 | 7/8 | 7/8 | 1-9/16 | 5-1/2 | 2 | TiN |
| N28326 | D201-1.000-XD2-S.3-Z2 | 1 | 1 | 1-5/8 | 5-7/8 | 2 | |
| N28320 | D201-1.000-XD2-S.3-Z2 | 1 | 1 | 1-5/8 | 5-7/8 | 2 | TiN |

# GENERAL PURPOSE- DB260

HSS
HIGH SPEED STEEL

HELIX
30°

BALL END

CENTER CUTTING

- Weldon flat standard
- Designed for slotting, pocketing and contour milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N26042 | DB260-0.125-XF2-B.3-Z2 | 1/8 | 3/8 | 3/16 | 2-11/16 | 2 | |
| N26048 | DB260-0.125-XF2-B.3-Z2 | 1/8 | 3/8 | 3/16 | 2-11/16 | 2 | TiN |
| N26041 | DB260-0.125-XF3-B.3-Z2 | 1/8 | 3/8 | 3/8 | 3-1/16 | 2 | |
| N26040 | DB260-0.125-XF3-B.3-Z2 | 1/8 | 3/8 | 3/8 | 3-1/16 | 2 | TiN |
| N26051 | DB260-0.156-XF3-B.3-Z2 | 5/32 | 3/8 | 7/16 | 3-1/8 | 2 | |
| N26050 | DB260-0.156-XF3-B.3-Z2 | 5/32 | 3/8 | 7/16 | 3-1/8 | 2 | TiN |
| N26061 | DB260-0.188-XF2-B.3-Z2 | 3/16 | 3/8 | 7/16 | 3-1/8 | 2 | |
| N26060 | DB260-0.188-XF2-B.3-Z2 | 3/16 | 3/8 | 7/16 | 3-1/8 | 2 | TiN |
| N26071 | DB260-0.219-XF2-B.3-Z2 | 7/32 | 3/8 | 1/2 | 3-1/8 | 2 | |
| N26070 | DB260-0.219-XF2-B.3-Z2 | 7/32 | 3/8 | 1/2 | 3-1/8 | 2 | TiN |
| N26081 | DB260-0.250-XF2-B.3-Z2 | 1/4 | 3/8 | 1/2 | 3-1/8 | 2 | |
| N26080 | DB260-0.250-XF2-B.3-Z2 | 1/4 | 3/8 | 1/2 | 3-1/8 | 2 | TiN |
| N26091 | DB260-0.281-XF2-B.3-Z2 | 9/32 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N26090 | DB260-0.281-XF2-B.3-Z2 | 9/32 | 3/8 | 9/16 | 3-1/8 | 2 | TiN |
| N26101 | DB260-0.313-XF2-B.3-Z2 | 5/16 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N26100 | DB260-0.313-XF2-B.3-Z2 | 5/16 | 3/8 | 9/16 | 3-1/8 | 2 | TiN |
| N26121 | DB260-0.375-XD2-B.3-Z2 | 3/8 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N26120 | DB260-0.375-XD2-B.3-Z2 | 3/8 | 3/8 | 9/16 | 3-1/8 | 2 | TiN |
| N26142 | DB260-0.438-XF2-B.3-Z2 | 7/16 | 1/2 | 13/16 | 3-3/4 | 2 | |
| N26140 | DB260-0.438-XF2-B.3-Z2 | 7/16 | 1/2 | 13/16 | 3-3/4 | 2 | TiN |
| N26162 | DB260-0.500-XD2-B.3-Z2 | 1/2 | 1/2 | 13/16 | 3-3/4 | 2 | |
| N26160 | DB260-0.500-XD2-B.3-Z2 | 1/2 | 1/2 | 13/16 | 3-3/4 | 2 | TiN |
| N26203 | DB260-0.625-XD2-B.3-Z2 | 5/8 | 5/8 | 1-1/8 | 4-1/2 | 2 | |
| N26200 | DB260-0.625-XD2-B.3-Z2 | 5/8 | 5/8 | 1-1/8 | 4-1/2 | 2 | TiN |

# GENERAL PURPOSE- SEL250

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for slotting and pocketing in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH |
|---|---|---|---|---|---|---|---|---|
| N25041 | SEL250-0.125-G3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 2-3/8 | 2 | | 13/16 |
| N25040 | SEL250-0.125-G3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 2-3/8 | 2 | TiN | 13/16 |
| N25081 | SEL250-0.250-G3-S.3-Z2 | 1/4 | 3/8 | 5/8 | 3-1/16 | 2 | | 1-1/2 |
| N25080 | SEL250-0.250-G3-S.3-Z2 | 1/4 | 3/8 | 5/8 | 3-1/16 | 2 | TiN | 1-1/2 |
| N25101 | SEL250-0.313-G2-S.3-Z2 | 5/16 | 3/8 | 3/4 | 3-5/16 | 2 | | 1-3/4 |
| N25100 | SEL250-0.313-G2-S.3-Z2 | 5/16 | 3/8 | 3/4 | 3-5/16 | 2 | TiN | 1-3/4 |
| N25121 | SEL250-0.375-E2-S.3-Z2 | 3/8 | 3/8 | 3/4 | 3-5/16 | 2 | | 1-3/4 |
| N25120 | SEL250-0.375-E2-S.3-Z2 | 3/8 | 3/8 | 3/4 | 3-5/16 | 2 | TiN | 1-3/4 |
| N25162 | SEL250-0.500-E2-S.3-Z2 | 1/2 | 1/2 | 1 | 4 | 2 | | 2-7/32 |
| N25160 | SEL250-0.500-E2-S.3-Z2 | 1/2 | 1/2 | 1 | 4 | 2 | TiN | 2-7/32 |
| N25203 | SEL250-0.625-E2-S.3-Z2 | 5/8 | 5/8 | 1-3/8 | 4-5/8 | 2 | | 2-23/32 |
| N25200 | SEL250-0.625-E2-S.3-Z2 | 5/8 | 5/8 | 1-3/8 | 4-5/8 | 2 | TiN | 2-23/32 |
| N25244 | SEL250-0.750-E2-S.3-Z2 | 3/4 | 3/4 | 1-5/8 | 5-3/8 | 2 | | 3-11/32 |
| N25240 | SEL250-0.750-E2-S.3-Z2 | 3/4 | 3/4 | 1-5/8 | 5-3/8 | 2 | TiN | 3-11/32 |
| N25326 | SEL250-1.000-E3-S.3-Z2 | 1 | 1 | 2-1/2 | 7-1/4 | 2 | | 4-31/32 |
| N25320 | SEL250-1.000-E3-S.3-Z2 | 1 | 1 | 2-1/2 | 7-1/4 | 2 | TiN | 4-31/32 |

# GENERAL PURPOSE- SEB270

HSS
HIGH SPEED STEEL

HELIX
30°

BALL END

CENTER CUTTING

- Weldon flat standard
- Designed for slotting, pocketing and contour milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH |
|---|---|---|---|---|---|---|---|---|
| N27061 | SEB270-0.188-G6-B.3-Z2 | 3/16 | 3/8 | 1/2 | 2-11/16 | 2 | | 1-1/8 |
| N27060 | SEB270-0.188-G6-B.3-Z2 | 3/16 | 3/8 | 1/2 | 2-11/16 | 2 | TiN | 1-1/8 |
| N27081 | SEB270-0.250-G6-B.3-Z2 | 1/4 | 3/8 | 5/8 | 3-1/16 | 2 | | 1-1/2 |
| N27080 | SEB270-0.250-G6-B.3-Z2 | 1/4 | 3/8 | 3/4 | 3-1/16 | 2 | TiN | 1-1/2 |
| N27101 | SEB270-0.313-G6-B.3-Z2 | 5/16 | 3/8 | 3/4 | 3-5/16 | 2 | | 1-3/4 |
| N27100 | SEB270-0.313-G6-B.3-Z2 | 5/16 | 3/8 | 3/4 | 3-5/16 | 2 | TiN | 1-3/4 |
| N27121 | SEB270-0.375-E5-B.3-Z2 | 3/8 | 3/8 | 3/4 | 3-5/16 | 2 | | 1-3/4 |
| N27120 | SEB270-0.375-E5-B.3-Z2 | 3/8 | 3/8 | 3/4 | 3-5/16 | 2 | TiN | 1-3/4 |
| N27162 | SEB270-0.500-E4-B.3-Z2 | 1/2 | 1/2 | 1 | 4 | 2 | | 2-7/32 |
| N27160 | SEB270-0.500-E4-B.3-Z2 | 1/2 | 1/2 | 1 | 4 | 2 | TiN | 2-7/32 |
| N27244 | SEB270-0.750-E4-B.3-Z2 | 3/4 | 3/4 | 1-5/8 | 5-3/8 | 2 | | 3-11/32 |
| N27240 | SEB270-0.750-E4-B.3-Z2 | 3/4 | 3/4 | 1-5/8 | 5-3/8 | 2 | TiN | 3-11/32 |

# GENERAL PURPOSE- SMM830

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Metric flute diameter / Inch shank
- Weldon flat standard
- Designed for slotting and pocketing in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N83030 | SMM830-0.118-F3-S.3-Z2 | 3mm | 3/8 | 3/8 | 2-5/16 | 2 | |
| N83031 | SMM830-0.118-F3-S.3-Z2 | 3mm | 3/8 | 3/8 | 2-5/16 | 2 | TiN |
| N83035 | SMM830-0.138-F3-S.3-Z2 | 3.5mm | 3/8 | 7/16 | 2-5/16 | 2 | |
| N83036 | SMM830-0.138-F3-S.3-Z2 | 3.5mm | 3/8 | 7/16 | 2-5/16 | 2 | TiN |
| N83040 | SMM830-0.157-F3-S.3-Z2 | 4mm | 3/8 | 7/16 | 2-5/16 | 2 | |
| N83041 | SMM830-0.157-F3-S.3-Z2 | 4mm | 3/8 | 7/16 | 2-5/16 | 2 | TiN |
| N83045 | SMM830-0.177-F2-S.3-Z2 | 4.5mm | 3/8 | 7/16 | 2-5/16 | 2 | |
| N83046 | SMM830-0.177-F2-S.3-Z2 | 4.5mm | 3/8 | 7/16 | 2-5/16 | 2 | TiN |
| N83050 | SMM830-0.197-F2-S.3-Z2 | 5mm | 3/8 | 7/16 | 2-5/16 | 2 | |
| N83051 | SMM830-0.197-F2-S.3-Z2 | 5mm | 3/8 | 7/16 | 2-5/16 | 2 | TiN |
| N83055 | SMM830-0.217-F2-S.3-Z2 | 5.5mm | 3/8 | 1/2 | 2-5/16 | 2 | |
| N83056 | SMM830-0.217-F2-S.3-Z2 | 5.5mm | 3/8 | 1/2 | 2-5/16 | 2 | TiN |
| N83060 | SMM830-0.236-F2-S.3-Z2 | 6mm | 3/8 | 1/2 | 2-5/16 | 2 | |
| N83061 | SMM830-0.236-F2-S.3-Z2 | 6mm | 3/8 | 1/2 | 2-5/16 | 2 | TiN |
| N83065 | SMM830-0.256-F2-S.3-Z2 | 6.5mm | 3/8 | 1/2 | 2-5/16 | 2 | |
| N83066 | SMM830-0.256-F2-S.3-Z2 | 6.5mm | 3/8 | 1/2 | 2-5/16 | 2 | TiN |
| N83070 | SMM830-0.276-F2-S.3-Z2 | 7mm | 3/8 | 9/16 | 2-5/16 | 2 | |
| N83071 | SMM830-0.276-F2-S.3-Z2 | 7mm | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N83075 | SMM830-0.295-F2-S.3-Z2 | 7.5mm | 3/8 | 9/16 | 2-5/16 | 2 | |
| N83076 | SMM830-0.295-F2-S.3-Z2 | 7.5mm | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N83080 | SMM830-0.315-F2-S.3-Z2 | 8mm | 3/8 | 9/16 | 2-5/16 | 2 | |
| N83081 | SMM830-0.315-F2-S.3-Z2 | 8mm | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N83085 | SMM830-0.335-F2-S.3-Z2 | 8.5mm | 3/8 | 9/16 | 2-5/16 | 2 | |
| N83086 | SMM830-0.335-F2-S.3-Z2 | 8.5mm | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N83090 | SMM830-0.354-F2-S.3-Z2 | 9mm | 3/8 | 9/16 | 2-5/16 | 2 | |
| N83091 | SMM830-0.354-F2-S.3-Z2 | 9mm | 3/8 | 9/16 | 2-5/16 | 2 | TiN |
| N83100 | SMM830-0.394-P2-S.3-Z2 | 10mm | 3/8 | 13/16 | 2-1/2 | 2 | |
| N83101 | SMM830-0.394-P2-S.3-Z2 | 10mm | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N83105 | SMM830-0.413-P2-S.3-Z2 | 10.5mm | 3/8 | 13/16 | 2-1/2 | 2 | |
| N83106 | SMM830-0.413-P2-S.3-Z2 | 10.5mm | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N83110 | SMM830-0.433-P2-S.3-Z2 | 11mm | 3/8 | 13/16 | 2-1/2 | 2 | |
| N83111 | SMM830-0.433-P2-S.3-Z2 | 11mm | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N83115 | SMM830-0.453-P2-S.3-Z2 | 11.5mm | 3/8 | 13/16 | 2-1/2 | 2 | |
| N83116 | SMM830-0.453-P2-S.3-Z2 | 11.5mm | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N83120 | SMM830-0.472-P2-S.3-Z2 | 12mm | 3/8 | 13/16 | 2-1/2 | 2 | |

# GENERAL PURPOSE- SMM830

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Metric flute diameter / inch shank
- Weldon flat standard
- Designed for slotting and pocketing in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N83121 | SMM830-0.472-P2-S.3-Z2 | 12mm | 3/8 | 13/16 | 2-1/2 | 2 | TiN |
| N83130 | SMM830-0.512-P2-S.3-Z2 | 13mm | 1/2 | 1 | 3 | 2 | |
| N83131 | SMM830-0.512-P2-S.3-Z2 | 13mm | 1/2 | 1 | 3 | 2 | TiN |
| N83140 | SMM830-0.551-P2-S.3-Z2 | 14mm | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N83141 | SMM830-0.551-P2-S.3-Z2 | 14mm | 1/2 | 1-1/8 | 3-1/8 | 2 | TiN |
| N83150 | SMM830-0.591-P2-S.3-Z2 | 15mm | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N83151 | SMM830-0.591-P2-S.3-Z2 | 15mm | 1/2 | 1-1/8 | 3-1/8 | 2 | TiN |
| N83160 | SMM830-0.630-P2-S.3-Z2 | 16mm | 5/8 | 1-5/16 | 3-7/16 | 2 | |
| N83161 | SMM830-0.630-P2-S.3-Z2 | 16mm | 5/8 | 1-5/16 | 3-7/16 | 2 | TiN |
| N83170 | SMM830-0.669-P2-S.3-Z2 | 17mm | 5/8 | 1-5/16 | 3-7/16 | 2 | |
| N83171 | SMM830-0.669-P2-S.3-Z2 | 17mm | 5/8 | 1-5/16 | 3-7/16 | 2 | TiN |
| N83180 | SMM830-0.709-F2-S.3-Z2 | 18mm | 3/4 | 1-5/16 | 3-9/16 | 2 | |
| N83181 | SMM830-0.709-F2-S.3-Z2 | 18mm | 3/4 | 1-5/16 | 3-9/16 | 2 | TiN |
| N83200 | SMM830-0.787-P2-S.3-Z2 | 20mm | 3/4 | 1-1/2 | 3-3/4 | 2 | |
| N83201 | SMM830-0.787-P2-S.3-Z2 | 20mm | 3/4 | 1-1/2 | 3-3/4 | 2 | TiN |
| N83220 | SMM830-0.866-F2-S.3-Z2 | 22mm | 7/8 | 1-1/2 | 3-3/4 | 2 | |
| N83221 | SMM830-0.866-F2-S.3-Z2 | 22mm | 7/8 | 1-1/2 | 3-3/4 | 2 | TiN |
| N83250 | SMM830-0.984-F2-S.3-Z2 | 25mm | 1 | 1-5/8 | 4-1/8 | 2 | |
| N83251 | SMM830-0.984-F2-S.3-Z2 | 25mm | 1 | 1-5/8 | 4-1/8 | 2 | TiN |

# GENERAL PURPOSE- STF320

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for slotting, pocketing and profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N32041 | STF320-0.125-F3-S.3-Z3 | 1/8 | 3/8 | 3/8 | 2-5/16 | 3 | |
| N32040 | STF320-0.125-F3-S.3-Z3 | 1/8 | 3/8 | 3/8 | 2-5/16 | 3 | TiN |
| N32061 | STF320-0.188-F3-S.3-Z3 | 3/16 | 3/8 | 1/2 | 2-3/8 | 3 | |
| N32060 | STF320-0.188-F3-S.3-Z3 | 3/16 | 3/8 | 1/2 | 2-3/8 | 3 | TiN |
| N32081 | STF320-0.250-F3-S.3-Z3 | 1/4 | 3/8 | 5/8 | 2-7/16 | 3 | |
| N32080 | STF320-0.250-F3-S.3-Z3 | 1/4 | 3/8 | 5/8 | 2-7/16 | 3 | TiN |
| N30081 | STF320-0.250-F5-S.3-Z3 | 1/4 | 3/8 | 1-1/4 | 3-1/8 | 3 | |
| N30080 | STF320-0.250-F5-S.3-Z3 | 1/4 | 3/8 | 1-1/4 | 3-1/8 | 3 | TiN |
| N32101 | STF320-0.313-F2-S.3-Z3 | 5/16 | 3/8 | 3/4 | 2-1/2 | 3 | |
| N32100 | STF320-0.313-F2-S.3-Z3 | 5/16 | 3/8 | 3/4 | 2-1/2 | 3 | TiN |
| N30101 | STF320-0.313-F4-S.3-Z3 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 3 | |
| N30100 | STF320-0.313-F4-S.3-Z3 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 3 | TiN |
| N32121 | STF320-0.375-D2-S.3-Z3 | 3/8 | 3/8 | 3/4 | 2-1/2 | 3 | |
| N32120 | STF320-0.375-D2-S.3-Z3 | 3/8 | 3/8 | 3/4 | 2-1/2 | 3 | TiN |
| N30121 | STF320-0.375-D4-S.3-Z3 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 3 | |
| N30120 | STF320-0.375-D4-S.3-Z3 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 3 | TiN |
| N32141 | STF320-0.438-P2-S.3-Z3 | 7/16 | 3/8 | 1 | 2-11/16 | 3 | |
| N32140 | STF320-0.438-P2-S.3-Z3 | 7/16 | 3/8 | 1 | 2-11/16 | 3 | TiN |
| N30142 | STF320-0.438-F4-S.3-Z3 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 3 | |
| N30140 | STF320-0.438-F4-S.3-Z3 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 3 | TiN |
| N32161 | STF320-0.500-P2-S.3-Z3 | 1/2 | 3/8 | 1 | 2-11/16 | 3 | |
| N32163 | STF320-0.500-P2-S.3-Z3 | 1/2 | 3/8 | 1 | 2-11/16 | 3 | TiN |
| N32162 | STF320-0.500-D3-S.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 3 | |
| N32160 | STF320-0.500-D3-S.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 3 | TiN |
| N30162 | STF320-0.500-D4-S.3-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | |
| N30160 | STF320-0.500-D4-S.3-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiN |
| N32182 | STF320-0.563-P2-S.3-Z3 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 3 | |
| N32180 | STF320-0.563-P2-S.3-Z3 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 3 | TiN |
| N32202 | STF320-0.625-P2-S.3-Z3 | 5/8 | 1/2 | 1-3/8 | 3-3/8 | 3 | |
| N32201 | STF320-0.625-P2-S.3-Z3 | 5/8 | 1/2 | 1-3/8 | 3-3/8 | 3 | TiN |
| N32203 | STF320-0.625-D3-S.3-Z3 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 3 | |
| N32200 | STF320-0.625-D3-S.3-Z3 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 3 | TiN |
| N30203 | STF320-0.625-D4-S.3-Z3 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 3 | |
| N30200 | STF320-0.625-D4-S.3-Z3 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 3 | TiN |
| N32242 | STF320-0.750-P1-S.3-Z3 | 3/4 | 1/2 | 1-5/8 | 3-5/8 | 3 | |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- STF320

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for slotting, pocketing and profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N32241 | STF320-0.750-P1-S.3-Z3 | 3/4 | 1/2 | 1-5/8 | 3-5/8 | 3 | TiN |
| N32243 | STF320-0.750-P2-S.3-Z3 | 3/4 | 5/8 | 1-5/8 | 3-3/4 | 3 | |
| N32245 | STF320-0.750-P2-S.3-Z3 | 3/4 | 5/8 | 1-5/8 | 3-3/4 | 3 | TiN |
| N32244 | STF320-0.750-D2-S.3-Z3 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 3 | |
| N32240 | STF320-0.750-D2-S.3-Z3 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 3 | TiN |
| N30244 | STF320-0.750-D4-S.3-Z3 | 3/4 | 3/4 | 3 | 5-1/4 | 3 | |
| N30240 | STF320-0.750-D4-S.3-Z3 | 3/4 | 3/4 | 3 | 5-1/4 | 3 | TiN |
| N32284 | STF320-0.875-P3-S.3-Z3 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 3 | |
| N32282 | STF320-0.875-P3-S.3-Z3 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 3 | TiN |
| N32324 | STF320-1.000-P3-S.3-Z3 | 1 | 3/4 | 1-7/8 | 4-1/8 | 3 | |
| N32322 | STF320-1.000-P3-S.3-Z3 | 1 | 3/4 | 1-7/8 | 4-1/8 | 3 | TiN |
| N32326 | STF320-1.000-D2-S.3-Z3 | 1 | 1 | 2 | 4-1/2 | 3 | |
| N32320 | STF320-1.000-D2-S.3-Z3 | 1 | 1 | 2 | 4-1/2 | 3 | TiN |
| N30326 | STF320-1.000-D4-S.3-Z3 | 1 | 1 | 4 | 6-1/2 | 3 | |
| N30320 | STF320-1.000-D4-S.3-Z3 | 1 | 1 | 4 | 6-1/2 | 3 | TiN |
| N32406 | STF320-1.250-P2-S.3-Z3 | 1-1/4 | 1 | 2 | 4-1/2 | 3 | |
| N32400 | STF320-1.250-P2-S.3-Z3 | 1-1/4 | 1 | 2 | 4-1/2 | 3 | TiN |
| N32407 | STF320-1.250-D2-S.3-Z3 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 3 | |
| N32408 | STF320-1.250-D2-S.3-Z3 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 3 | TiN |
| N30487 | STF320-1.500-P3-S.3-Z3 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 3 | |
| N30480 | STF320-1.500-P3-S.3-Z3 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 3 | TiN |

# GENERAL PURPOSE- DTF310

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Designed for slotting, pocketing and profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N31041 | DTF310-0.125-XF3-S.3-Z3 | 1/8 | 3/8 | 3/8 | 3 1/16 | 3 | |
| N31040 | DTF310-0.125-XF3-S.3-Z3 | 1/8 | 3/8 | 3/8 | 3 1/16 | 3 | TiN |
| N31061 | DTF310-0.188-XF3-S.3-Z3 | 3/16 | 3/8 | 1/2 | 3 1/4 | 3 | |
| N31060 | DTF310-0.188-XF3-S.3-Z3 | 3/16 | 3/8 | 1/2 | 3 1/4 | 3 | TiN |
| N31081 | DTF310-0.250-XF3-S.3-Z3 | 1/4 | 3/8 | 5/8 | 3 3/8 | 3 | |
| N31080 | DTF310-0.250-XF3-S.3-Z3 | 1/4 | 3/8 | 5/8 | 3 3/8 | 3 | TiN |
| N31101 | DTF310-0.313-XF2-S.3-Z3 | 5/16 | 3/8 | 3/4 | 3 1/2 | 3 | |
| N31100 | DTF310-0.313-XF2-S.3-Z3 | 5/16 | 3/8 | 3/4 | 3 1/2 | 3 | TiN |
| N31121 | DTF310-0.375-XD2-S.3-Z3 | 3/8 | 3/8 | 3/4 | 3 1/2 | 3 | |
| N31120 | DTF310-0.375-XD2-S.3-Z3 | 3/8 | 3/8 | 3/4 | 3 1/2 | 3 | TiN |
| N31142 | DTF310-0.438-XF2-S.3-Z3 | 7/16 | 1/2 | 1 | 4 1/8 | 3 | |
| N31140 | DTF310-0.438-XF2-S.3-Z3 | 7/16 | 1/2 | 1 | 4 1/8 | 3 | TiN |
| N31162 | DTF310-0.500-XD2-S.3-Z3 | 1/2 | 1/2 | 1 | 4 1/8 | 3 | |
| N31160 | DTF310-0.500-XD2-S.3-Z3 | 1/2 | 1/2 | 1 | 4 1/8 | 3 | TiN |
| N31183 | DTF310-0.563-XF2-S.3-Z3 | 9/16 | 5/8 | 1 3/8 | 5 | 3 | |
| N31180 | DTF310-0.563-XF2-S.3-Z3 | 9/16 | 5/8 | 1 3/8 | 5 | 3 | TiN |
| N31203 | DTF310-0.625-XD2-S.3-Z3 | 5/8 | 5/8 | 1 3/8 | 5 | 3 | |
| N31200 | DTF310-0.625-XD2-S.3-Z3 | 5/8 | 5/8 | 1 3/8 | 5 | 3 | TiN |
| N31244 | DTF310-0.750-XD2-S.3-Z3 | 3/4 | 3/4 | 1 5/8 | 5 5/8 | 3 | |
| N31240 | DTF310-0.750-XD2-S.3-Z3 | 3/4 | 3/4 | 1 5/8 | 5 5/8 | 3 | TiN |

# GENERAL PURPOSE- A208

HSS
HIGH SPEED STEEL

HELIX
37°

SQUARE END

CENTER CUTTING

- Cylindrical margin to eliminate chatter
- Weldon flat standard
- Ideal for slotting and pocketing in aluminum and non-ferrous alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N90041 | A208-0.125-F3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 2-5/16 | 2 | |
| N89336 | A208-0.125-F3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 2-5/16 | 2 | TiCN |
| N90061 | A208-0.188-F3-S.3-Z2 | 3/16 | 3/8 | 1/2 | 2-3/8 | 2 | |
| N89337 | A208-0.188-F3-S.3-Z2 | 3/16 | 3/8 | 1/2 | 2-3/8 | 2 | TiCN |
| N90081 | A208-0.250-F3-S.3-Z2 | 1/4 | 3/8 | 5/8 | 2-7/16 | 2 | |
| N89338 | A208-0.250-F3-S.3-Z2 | 1/4 | 3/8 | 5/8 | 2-7/16 | 2 | TiCN |
| N92081 | A208-0.250-F5-S.3-Z2 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 2 | |
| N89374 | A208-0.250-F5-S.3-Z2 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 2 | TiCN |
| N94081 | A208-0.250-F7-S.3-Z2 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 2 | |
| N89399 | A208-0.250-F7-S.3-Z2 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 2 | TiCN |
| N90101 | A208-0.313-F2-S.3-Z2 | 5/16 | 3/8 | 3/4 | 2-1/2 | 2 | |
| N89339 | A208-0.313-F2-S.3-Z2 | 5/16 | 3/8 | 3/4 | 2-1/2 | 2 | TiCN |
| N92101 | A208-0.313-F4-S.3-Z2 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 2 | |
| N89375 | A208-0.313-F4-S.3-Z2 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 2 | TiCN |
| N94101 | A208-0.313-F6-S.3-Z2 | 5/16 | 3/8 | 2 | 3-3/4 | 2 | |
| N89410 | A208-0.313-F6-S.3-Z2 | 5/16 | 3/8 | 2 | 3-3/4 | 2 | TiCN |
| N90121 | A208-0.375-D2-S.3-Z2 | 3/8 | 3/8 | 3/4 | 2-1/2 | 2 | |
| N89340 | A208-0.375-D2-S.3-Z2 | 3/8 | 3/8 | 3/4 | 2-1/2 | 2 | TiCN |
| N92121 | A208-0.375-D4-S.3-Z2 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 2 | |
| N89376 | A208-0.375-D4-S.3-Z2 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 2 | TiCN |
| N94121 | A208-0.375-D7-S.3-Z2 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 2 | |
| N89411 | A208-0.375-D7-S.3-Z2 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 2 | TiCN |
| N90141 | A208-0.438-P2-S.3-Z2 | 7/16 | 3/8 | 1 | 2-11/16 | 2 | |
| N89341 | A208-0.438-P2-S.3-Z2 | 7/16 | 3/8 | 1 | 2-11/16 | 2 | TiCN |
| N92142 | A208-0.438-F4-S.3-Z2 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 2 | |
| N89377 | A208-0.438-F4-S.3-Z2 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 2 | TiCN |
| N94142 | A208-0.438-F6-S.3-Z2 | 7/16 | 1/2 | 2-3/4 | 4-3/4 | 2 | |
| N89412 | A208-0.438-F6-S.3-Z2 | 7/16 | 1/2 | 2-3/4 | 4-3/4 | 2 | TiCN |
| N90162 | A208-0.500-D3-S.3-Z2 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 2 | |
| N89342 | A208-0.500-D3-S.3-Z2 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 2 | TiCN |
| N92162 | A208-0.500-D4-S.3-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | |
| N89378 | A208-0.500-D4-S.3-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiCN |
| N94162 | A208-0.500-D6-S.3-Z2 | 1/2 | 1/2 | 3 | 5 | 2 | |
| N89413 | A208-0.500-D6-S.3-Z2 | 1/2 | 1/2 | 3 | 5 | 2 | TiCN |
| N90182 | A208-0.563-P2-S.3-Z2 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 2 | |
| N89343 | A208-0.563-P2-S.3-Z2 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 2 | TiCN |
| N90202 | A208-0.625-P2-S.3-Z2 | 5/8 | 1/2 | 1-3/8 | 3-3/8 | 2 | |
| N89344 | A208-0.625-P2-S.3-Z2 | 5/8 | 1/2 | 1-3/8 | 3-3/8 | 2 | TiCN |

DISCOUNT CODE D40

# GENERAL PURPOSE- A208

HSS
HIGH SPEED STEEL

HELIX
37°

SQUARE END

CENTER CUTTING

- Cylindrical margin to eliminate chatter
- Weldon flat standard
- Ideal for slotting and pocketing in aluminum and non-ferrous alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N90203 | A208-0.625-D3-S.3-Z2 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 2 | |
| N89345 | A208-0.625-D3-S.3-Z2 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 2 | TiCN |
| N92203 | A208-0.625-D4-S.3-Z2 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 2 | |
| N89379 | A208-0.625-D4-S.3-Z2 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 2 | TiCN |
| N94203 | A208-0.625-D6-S.3-Z2 | 5/8 | 5/8 | 4 | 6-1/8 | 2 | |
| N89414 | A208-0.625-D6-S.3-Z2 | 5/8 | 5/8 | 4 | 6-1/8 | 2 | TiCN |
| N90223 | A208-0.688-P2-S.3-Z2 | 11/16 | 5/8 | 1-5/8 | 3-3/4 | 2 | |
| N89346 | A208-0.688-P2-S.3-Z2 | 11/16 | 5/8 | 1-5/8 | 3-3/4 | 2 | TiCN |
| N90242 | A208-0.750-P2-S.3-Z2 | 3/4 | 1/2 | 1-5/8 | 3-5/8 | 2 | |
| N89347 | A208-0.750-P2-S.3-Z2 | 3/4 | 1/2 | 1-5/8 | 3-5/8 | 2 | TiCN |
| N90244 | A208-0.750-D2-S.3-Z2 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N89348 | A208-0.750-D2-S.3-Z2 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiCN |
| N92244 | A208-0.750-D4-S.3-Z2 | 3/4 | 3/4 | 3 | 5-1/4 | 2 | |
| N89380 | A208-0.750-D4-S.3-Z2 | 3/4 | 3/4 | 3 | 5-1/4 | 2 | TiCN |
| N94244 | A208-0.750-D5-S.3-Z2 | 3/4 | 3/4 | 4 | 6-1/4 | 2 | |
| N89415 | A208-0.750-D5-S.3-Z2 | 3/4 | 3/4 | 4 | 6-1/4 | 2 | TiCN |
| N90264 | A208-0.813-P2-S.3-Z2 | 13/16 | 3/4 | 1-7/8 | 4-1/8 | 2 | |
| N89349 | A208-0.813-P2-S.3-Z2 | 13/16 | 3/4 | 1-7/8 | 4-1/8 | 2 | TiCN |
| N90284 | A208-0.875-P2-S.3-Z2 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 2 | |
| N89350 | A208-0.875-P2-S.3-Z2 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 2 | TiCN |
| N90285 | A208-0.875-D2-S.3-Z2 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 2 | |
| N89351 | A208-0.875-D2-S.3-Z2 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 2 | TiCN |
| N90324 | A208-1.000-P2-S.3-Z2 | 1 | 3/4 | 1-7/8 | 4-1/8 | 2 | |
| N89353 | A208-1.000-P2-S.3-Z2 | 1 | 3/4 | 1-7/8 | 4-1/8 | 2 | TiCN |
| N90326 | A208-1.000-D2-S.3-Z2 | 1 | 1 | 2 | 4-1/2 | 2 | |
| N89354 | A208-1.000-D2-S.3-Z2 | 1 | 1 | 2 | 4-1/2 | 2 | TiCN |
| N92326 | A208-1.000-D4-S.3-Z2 | 1 | 1 | 4 | 6-1/2 | 2 | |
| N89382 | A208-1.000-D4-S.3-Z2 | 1 | 1 | 4 | 6-1/2 | 2 | TiCN |
| N94326 | A208-1.000-D6-S.3-Z2 | 1 | 1 | 6 | 8-1/2 | 2 | |
| N89417 | A208-1.000-D6-S.3-Z2 | 1 | 1 | 6 | 8-1/2 | 2 | TiCN |
| N92407 | A208-1.250-D3-S.3-Z2 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 2 | |
| N89383 | A208-1.250-D3-S.3-Z2 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 2 | TiCN |
| N94407 | A208-1.250-D5-S.3-Z2 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 2 | |
| N89418 | A208-1.250-D5-S.3-Z2 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 2 | TiCN |
| N90487 | A208-1.500-P1-S.3-Z2 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 2 | |
| N89356 | A208-1.500-P1-S.3-Z2 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 2 | TiCN |
| N90647 | A208-2.000-P1-S.3-Z2 | 2 | 1-1/4 | 2 | 4-1/2 | 2 | |
| N89358 | A208-2.000-P1-S.3-Z2 | 2 | 1-1/4 | 2 | 4-1/2 | 2 | TiCN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- AB910

HSS
HIGH SPEED STEEL

HELIX
37°

BALL END

CENTER CUTTING

- Cylindrical margin to eliminate chatter
- Weldon flat standard
- Designed for slotting, pocketing and contour milling applications in aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N91081 | AB910-0.250-F3-B.3-Z2 | 1/4 | 3/8 | 5/8 | 2-7/16 | 2 | |
| N89359 | AB910-0.250-F3-B.3-Z2 | 1/4 | 3/8 | 5/8 | 2-7/16 | 2 | TiCN |
| N93081 | AB910-0.250-F5-B.3-Z2 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 2 | |
| N89387 | AB910-0.250-F5-B.3-Z2 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 2 | TiCN |
| N95081 | AB910-0.250-F7-B.3-Z2 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 2 | |
| N89420 | AB910-0.250-F7-B.3-Z2 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 2 | TiCN |
| N91121 | AB910-0.375-D2-B.3-Z2 | 3/8 | 3/8 | 3/4 | 2-1/2 | 2 | |
| N89361 | AB910-0.375-D2-B.3-Z2 | 3/8 | 3/8 | 3/4 | 2-1/2 | 2 | TiCN |
| N93121 | AB910-0.375-D4-B.3-Z2 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 2 | |
| N89389 | AB910-0.375-D4-B.3-Z2 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 2 | TiCN |
| N95121 | AB910-0.375-D7-B.3-Z2 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 2 | |
| N89422 | AB910-0.375-D7-B.3-Z2 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 2 | TiCN |
| N93142 | AB910-0.438-F4-B.3-Z2 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 2 | |
| N89390 | AB910-0.438-F4-B.3-Z2 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 2 | TiCN |
| N91162 | AB910-0.500-D3-B.3-Z2 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 2 | |
| N89363 | AB910-0.500-D3-B.3-Z2 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 2 | TiCN |
| N93162 | AB910-0.500-D4-B.3-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | |
| N89391 | AB910-0.500-D4-B.3-Z2 | 1/2 | 1/2 | 2 | 4 | 2 | TiCN |
| N95162 | AB910-0.500-D6-B.3-Z2 | 1/2 | 1/2 | 3 | 5 | 2 | |
| N89424 | AB910-0.500-D6-B.3-Z2 | 1/2 | 1/2 | 3 | 5 | 2 | TiCN |
| N91244 | AB910-0.750-D2-B.3-Z2 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | |
| N89367 | AB910-0.750-D2-B.3-Z2 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 2 | TiCN |
| N93244 | AB910-0.750-D4-B.3-Z2 | 3/4 | 3/4 | 3 | 5-1/4 | 2 | |
| N89393 | AB910-0.750-D4-B.3-Z2 | 3/4 | 3/4 | 3 | 5-1/4 | 2 | TiCN |
| N91324 | AB910-1.000-P2-B.3-Z2 | 1 | 3/4 | 1-7/8 | 4-1/8 | 2 | |
| N89370 | AB910-1.000-P2-B.3-Z2 | 1 | 3/4 | 1-7/8 | 4-1/8 | 2 | TiCN |
| N91326 | AB910-1.000-D2-B.3-Z2 | 1 | 1 | 2 | 4-1/2 | 2 | |
| N89371 | AB910-1.000-D2-B.3-Z2 | 1 | 1 | 2 | 4-1/2 | 2 | TiCN |
| N93326 | AB910-1.000-D4-B.3-Z2 | 1 | 1 | 4 | 6-1/2 | 2 | |
| N89395 | AB910-1.000-D4-B.3-Z2 | 1 | 1 | 4 | 6-1/2 | 2 | TiCN |
| N95326 | AB910-1.000-D6-B.3-Z2 | 1 | 1 | 6 | 8-1/2 | 2 | |
| N89428 | AB910-1.000-D6-B.3-Z2 | 1 | 1 | 6 | 8-1/2 | 2 | TiCN |
| N91487 | AB910-1.500-P1-B.3-Z2 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 2 | |
| N89373 | AB910-1.500-P1-B.3-Z2 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 2 | TiCN |
| N91647 | AB910-2.000-P1-B.3-Z2 | 2 | 1-1/4 | 2 | 4-1/2 | 2 | |
| N79405 | AB910-2.000-P1-B.3-Z2 | 2 | 1-1/4 | 2 | 4-1/2 | 2 | TiCN |

DISCOUNT CODE D40

# GENERAL PURPOSE- DA206

HSS
HIGH SPEED STEEL

HELIX
37°

SQUARE END

CENTER CUTTING

- Cylindrical margin to eliminate chatter
- Weldon flat standard
- Ideal for slotting and pocketing in aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N96041 | DA206-0.125-XF3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 3-1/16 | 2 | |
| N89431 | DA206-0.125-XF3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 3-1/16 | 2 | TiCN |
| N96061 | DA206-0.188-XF2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 3-1/8 | 2 | |
| N89432 | DA206-0.188-XF2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 3-1/8 | 2 | TiCN |
| N96081 | DA206-0.250-XF2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 3-1/8 | 2 | |
| N89433 | DA206-0.250-XF2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 3-1/8 | 2 | TiCN |
| N96101 | DA206-0.313-XF2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N89434 | DA206-0.313-XF2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 3-1/8 | 2 | TiCN |
| N96121 | DA206-0.375-XD2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N89435 | DA206-0.375-XD2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 3-1/8 | 2 | TiCN |
| N96162 | DA206-0.500-XD2-S.3-Z2 | 1/2 | 1/2 | 13/16 | 3-3/4 | 2 | |
| N89437 | DA206-0.500-XD2-S.3-Z2 | 1/2 | 1/2 | 13/16 | 3-3/4 | 2 | TiCN |
| N96203 | DA206-0.625-XD2-S.3-Z2 | 5/8 | 5/8 | 1-1/8 | 4-1/2 | 2 | |
| N89439 | DA206-0.625-XD2-S.3-Z2 | 5/8 | 5/8 | 1-1/8 | 4-1/2 | 2 | TiCN |
| N96244 | DA206-0.750-XD2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 5 | 2 | |
| N89441 | DA206-0.750-XD2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 5 | 2 | TiCN |

# HIGH PERFORMANCE- A337

HSS
HIGH SPEED STEEL

HELIX
37°

SQUARE END

CENTER CUTTING

- Cylindrical margin to eliminate chatter
- Weldon flat standard
- Designed for slotting, pocketing and profiling in aluminum

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N33800 | A337-0.188-F3-S.3-Z3 | 3/16 | 3/8 | 1/2 | 2-3/8 | 3 | |
| N33802 | A337-0.188-F3-S.3-Z3 | 3/16 | 3/8 | 1/2 | 2-3/8 | 3 | TiCN |
| N33803 | A337-0.250-F2-S.3-Z3 | 1/4 | 3/8 | 3/8 | 2-3/16 | 3 | |
| N33805 | A337-0.250-F2-S.3-Z3 | 1/4 | 3/8 | 3/8 | 2-3/16 | 3 | TiCN |
| N33806 | A337-0.250-F3-S.3-Z3 | 1/4 | 3/8 | 5/8 | 2-7/16 | 3 | |
| N33808 | A337-0.250-F3-S.3-Z3 | 1/4 | 3/8 | 5/8 | 2-7/16 | 3 | TiCN |
| N33809 | A337-0.250-F5-S.3-Z3 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 3 | |
| N33811 | A337-0.250-F5-S.3-Z3 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 3 | TiCN |
| N33812 | A337-0.250-F7-S.3-Z3 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 3 | |
| N33814 | A337-0.250-F7-S.3-Z3 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 3 | TiCN |
| N33818 | A337-0.313-F2-S.3-Z3 | 5/16 | 3/8 | 3/4 | 2-1/2 | 3 | |
| N33820 | A337-0.313-F2-S.3-Z3 | 5/16 | 3/8 | 3/4 | 2-1/2 | 3 | TiCN |
| N33821 | A337-0.313-F4-S.3-Z3 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 3 | |
| N33823 | A337-0.313-F4-S.3-Z3 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 3 | TiCN |
| N33824 | A337-0.313-F6-S.3-Z3 | 5/16 | 3/8 | 2 | 3-3/4 | 3 | |
| N33826 | A337-0.313-F6-S.3-Z3 | 5/16 | 3/8 | 2 | 3-3/4 | 3 | TiCN |
| N33830 | A337-0.375-D2-S.3-Z3 | 3/8 | 3/8 | 3/4 | 2-1/2 | 3 | |
| N33832 | A337-0.375-D2-S.3-Z3 | 3/8 | 3/8 | 3/4 | 2-1/2 | 3 | TiCN |
| N33833 | A337-0.375-D4-S.3-Z3 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 3 | |
| N33835 | A337-0.375-D4-S.3-Z3 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 3 | TiCN |
| N33836 | A337-0.375-D7-S.3-Z3 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 3 | |
| N33838 | A337-0.375-D7-S.3-Z3 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 3 | TiCN |
| N33842 | A337-0.438-F3-S.3-Z3 | 7/16 | 1/2 | 1-1/4 | 3-1/4 | 3 | |
| N33844 | A337-0.438-F3-S.3-Z3 | 7/16 | 1/2 | 1-1/4 | 3-1/4 | 3 | TiCN |
| N33845 | A337-0.438-F4-S.3-Z3 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 3 | |
| N33847 | A337-0.438-F4-S.3-Z3 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 3 | TiCN |
| N33851 | A337-0.500-D1-S.3-Z3 | 1/2 | 1/2 | 1/2 | 2-1/2 | 3 | |
| N33853 | A337-0.500-D1-S.3-Z3 | 1/2 | 1/2 | 1/2 | 2-1/2 | 3 | TiCN |
| N33854 | A337-0.500-D3-S.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 3 | |
| N33856 | A337-0.500-D3-S.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 3 | TiCN |
| N33857 | A337-0.500-D4-S.3-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | |
| N33859 | A337-0.500-D4-S.3-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiCN |
| N33860 | A337-0.500-D6-S.3-Z3 | 1/2 | 1/2 | 3 | 5 | 3 | |
| N33862 | A337-0.500-D6-S.3-Z3 | 1/2 | 1/2 | 3 | 5 | 3 | TiCN |
| N33863 | A337-0.625-D1-S.3-Z3 | 5/8 | 5/8 | 5/8 | 2-3/4 | 3 | |
| N33865 | A337-0.625-D1-S.3-Z3 | 5/8 | 5/8 | 5/8 | 2-3/4 | 3 | TiCN |
| N33866 | A337-0.625-D3-S.3-Z3 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 3 | |

# HIGH PERFORMANCE- A337

HSS
HIGH SPEED STEEL

HELIX
37°

SQUARE END

CENTER CUTTING

- Cylindrical margin to eliminate chatter
- Weldon flat standard
- Designed for slotting, pocketing and profiling in aluminum

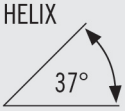
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N33868 | A337-0.625-D3-S.3-Z3 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 3 | TiCN |
| N33869 | A337-0.625-D4-S.3-Z3 | 5/8 | 5/8 | 2 | 4-1/8 | 3 | |
| N33871 | A337-0.625-D4-S.3-Z3 | 5/8 | 5/8 | 2 | 4-1/8 | 3 | TiCN |
| N33875 | A337-0.625-D6-S.3-Z3 | 5/8 | 5/8 | 3 | 5-1/8 | 3 | |
| N33877 | A337-0.625-D6-S.3-Z3 | 5/8 | 5/8 | 3 | 5-1/8 | 3 | TiCN |
| N33878 | A337-0.750-D1-S.3-Z3 | 3/4 | 3/4 | 3/4 | 3 | 3 | |
| N33880 | A337-0.750-D1-S.3-Z3 | 3/4 | 3/4 | 3/4 | 3 | 3 | TiCN |
| N33881 | A337-0.750-D2-S.3-Z3 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 3 | |
| N33883 | A337-0.750-D2-S.3-Z3 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 3 | TiCN |
| N33884 | A337-0.750-D3-S.3-Z3 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 3 | |
| N33886 | A337-0.750-D3-S.3-Z3 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 3 | TiCN |
| N33887 | A337-0.750-D4-S.3-Z3 | 3/4 | 3/4 | 3 | 5-1/4 | 3 | |
| N33889 | A337-0.750-D4-S.3-Z3 | 3/4 | 3/4 | 3 | 5-1/4 | 3 | TiCN |
| N33890 | A337-0.750-D5-S.3-Z3 | 3/4 | 3/4 | 4 | 6-1/4 | 3 | |
| N33892 | A337-0.750-D5-S.3-Z3 | 3/4 | 3/4 | 4 | 6-1/4 | 3 | TiCN |
| N33896 | A337-1.000-D1-S.3-Z3 | 1 | 1 | 1 | 3-1/2 | 3 | |
| N33898 | A337-1.000-D1-S.3-Z3 | 1 | 1 | 1 | 3-1/2 | 3 | TiCN |
| N33899 | A337-1.000-D2-S.3-Z3 | 1 | 1 | 2 | 4-1/2 | 3 | |
| N33901 | A337-1.000-D2-S.3-Z3 | 1 | 1 | 2 | 4-1/2 | 3 | TiCN |
| N33902 | A337-1.000-D3-S.3-Z3 | 1 | 1 | 3 | 5-1/2 | 3 | |
| N33904 | A337-1.000-D3-S.3-Z3 | 1 | 1 | 3 | 5-1/2 | 3 | TiCN |
| N33905 | A337-1.000-D4-S.3-Z3 | 1 | 1 | 4 | 6-1/2 | 3 | |
| N33907 | A337-1.000-D4-S.3-Z3 | 1 | 1 | 4 | 6-1/2 | 3 | TiCN |
| N33908 | A337-1.000-D6-S.3-Z3 | 1 | 1 | 6 | 8-1/2 | 3 | |
| N33910 | A337-1.000-D6-S.3-Z3 | 1 | 1 | 6 | 8-1/2 | 3 | TiCN |
| N33911 | A337-1.250-D1-S.3-Z3 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 3 | |
| N33913 | A337-1.250-D1-S.3-Z3 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 3 | TiCN |
| N33914 | A337-1.250-D2-S.3-Z3 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 3 | |
| N33916 | A337-1.250-D2-S.3-Z3 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 3 | TiCN |
| N33917 | A337-1.250-D3-S.3-Z3 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 3 | |
| N33919 | A337-1.250-D3-S.3-Z3 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 3 | TiCN |
| N33920 | A337-1.250-D5-S.3-Z3 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 3 | |
| N33922 | A337-1.250-D5-S.3-Z3 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 3 | TiCN |
| N33923 | A337-1.500-P1-S.3-Z3 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 3 | |
| N33925 | A337-1.500-P1-S.3-Z3 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 3 | TiCN |
| N33932 | A337-1.500-P4-S.3-Z3 | 1-1/2 | 1-1/4 | 6 | 8-1/2 | 3 | |
| N33934 | A337-1.500-P4-S.3-Z3 | 1-1/2 | 1-1/4 | 6 | 8-1/2 | 3 | TiCN |

**DISCOUNT CODE D40**

# HIGH PERFORMANCE- AB337

HSS
HIGH SPEED STEEL

HELIX




BALL END

CENTER CUTTING

- Cylindrical margin to eliminate chatter
- Weldon flat standard
- Designed for slotting, pocketing, profiling and contour milling applications in aluminum

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N33959 | AB337-0.500-D3-B.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 3 | |
| N33961 | AB337-0.500-D3-B.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 3 | TiCN |
| N33962 | AB337-0.500-D4-B.3-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | |
| N33964 | AB337-0.500-D4-B.3-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiCN |
| N33965 | AB337-0.750-D2-B.3-Z3 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 3 | |
| N33967 | AB337-0.750-D2-B.3-Z3 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 3 | TiCN |
| N33968 | AB337-0.750-D4-B.3-Z3 | 3/4 | 3/4 | 3 | 5-1/4 | 3 | |
| N33970 | AB337-0.750-D4-B.3-Z3 | 3/4 | 3/4 | 3 | 5-1/4 | 3 | TiCN |
| N33971 | AB337-1.000-D2-B.3-Z3 | 1 | 1 | 2 | 4-1/2 | 3 | |
| N33973 | AB337-1.000-D2-B.3-Z3 | 1 | 1 | 2 | 4-1/2 | 3 | TiCN |

# FOR ALUMINUM- ACB337

HSS
HIGH SPEED STEEL

HELIX
37°

CHAMFER
45°

CENTER CUTTING

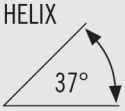
CHIPBREAKER

- Cylindrical margin to eliminate chatter
- Weldon flat standard
- Designed for slotting, pocketing and profiling aluminum

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N70751 | ACB337-0.375-D2-C025.3-Z3 | 3/8 | 3/8 | 3/4 | 2-1/2 | 3 | | 0.025 |
| N70839 | ACB337-0.375-D2-C025.3-Z3 | 3/8 | 3/8 | 3/4 | 2-1/2 | 3 | TiCN | 0.025 |
| N70752 | ACB337-0.375-D4-C025.3-Z3 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 3 | | 0.025 |
| N70840 | ACB337-0.375-D4-C025.3-Z3 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 3 | TiCN | 0.025 |
| N70759 | ACB337-0.500-D3-C030.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 3 | | 0.030 |
| N70847 | ACB337-0.500-D3-C030.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 3 | TiCN | 0.030 |
| N70767 | ACB337-0.750-D1-C040.3-Z3 | 3/4 | 3/4 | 3/4 | 2-7/8 | 3 | | 0.040 |
| N70855 | ACB337-0.750-D1-C040.3-Z3 | 3/4 | 3/4 | 3/4 | 2-7/8 | 3 | TiCN | 0.040 |
| N70768 | ACB337-0.750-D2-C040.3-Z3 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 3 | | 0.040 |
| N70856 | ACB337-0.750-D2-C040.3-Z3 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 3 | TiCN | 0.040 |
| N70769 | ACB337-0.750-D3-C040.3-Z3 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 3 | | 0.040 |
| N70857 | ACB337-0.750-D3-C040.3-Z3 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 3 | TiCN | 0.040 |
| N70770 | ACB337-0.750-D4-C040.3-Z3 | 3/4 | 3/4 | 3 | 5-1/8 | 3 | | 0.040 |
| N70858 | ACB337-0.750-D4-C040.3-Z3 | 3/4 | 3/4 | 3 | 5-1/8 | 3 | TiCN | 0.040 |
| N70774 | ACB337-1.000-D2-C040.3-Z3 | 1 | 1 | 2 | 4-1/2 | 3 | | 0.040 |
| N70862 | ACB337-1.000-D2-C040.3-Z3 | 1 | 1 | 2 | 4-1/2 | 3 | TiCN | 0.040 |
| N70775 | ACB337-1.000-D3-C040.3-Z3 | 1 | 1 | 3 | 5-1/2 | 3 | | 0.040 |
| N70863 | ACB337-1.000-D3-C040.3-Z3 | 1 | 1 | 3 | 5-1/2 | 3 | TiCN | 0.040 |
| N70777 | ACB337-1.000-D6-C040.3-Z3 | 1 | 1 | 6 | 8-1/2 | 3 | | 0.040 |
| N70865 | ACB337-1.000-D6-C040.3-Z3 | 1 | 1 | 6 | 8-1/2 | 3 | TiCN | 0.040 |
| N70783 | ACB337-1.500-P2-C045.3-Z3 | 1-1/2 | 1-1/4 | 3 | 5-1/2 | 3 | | 0.045 |
| N70871 | ACB337-1.500-P2-C045.3-Z3 | 1-1/2 | 1-1/4 | 3 | 5-1/2 | 3 | TiCN | 0.045 |

# FOR ALUMINUM- AL337

HSS
HIGH SPEED STEEL

HELIX



SQUARE END

CENTER CUTTING

- Cylindrical margin to eliminate chatter
- Weldon flat standard
- Designed for slotting, pocketing and contour milling applications in aluminum

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH |
|---|---|---|---|---|---|---|---|---|
| N08688 | AL337-0.500-E3-S.3-Z3 | 1/2 | 1/2 | 1-1/4 | 6 | 3 | | 4 |
| N08738 | AL337-0.500-E3-S.3-Z3 | 1/2 | 1/2 | 1-1/4 | 6 | 3 | TiCN | 4 |
| N08694 | AL337-0.625-E2-S.3-Z3 | 5/8 | 5/8 | 1-1/2 | 7-1/8 | 3 | | 5 |
| N08746 | AL337-0.625-E2-S.3-Z3 | 5/8 | 5/8 | 1-1/2 | 7-1/8 | 3 | TiCN | 5 |
| N08698 | AL337-0.750-E3-S.3-Z3 | 3/4 | 3/4 | 2 | 8-1/4 | 3 | | 6 |
| N08748 | AL337-0.750-E3-S.3-Z3 | 3/4 | 3/4 | 2 | 8-1/4 | 3 | TiCN | 6 |
| N08706 | AL337-1.000-E3-S.3-Z3 | 1 | 1 | 2-1/2 | 10-1/2 | 3 | | 8 |
| N08754 | AL337-1.000-E3-S.3-Z3 | 1 | 1 | 2-1/2 | 10-1/2 | 3 | TiCN | 8 |

# GENERAL PURPOSE- S404

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N35041 | S404-0.125-F3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 2-5/16 | 4 | |
| N35040 | S404-0.125-F3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 2-5/16 | 4 | TiN |
| N35051 | S404-0.156-F3-S.3-Z4 | 5/32 | 3/8 | 7/16 | 2-5/16 | 4 | |
| N35050 | S404-0.156-F3-S.3-Z4 | 5/32 | 3/8 | 7/16 | 2-5/16 | 4 | TiN |
| N35059 | S404-0.172-F3-S.3-Z4 | 11/64 | 3/8 | 1/2 | 2-3/8 | 4 | |
| N35058 | S404-0.172-F3-S.3-Z4 | 11/64 | 3/8 | 1/2 | 2-3/8 | 4 | TiN |
| N34061 | S404-0.188-F1-S.3-Z4 | 3/16 | 3/8 | 3/16 | 2-1/16 | 4 | |
| N34060 | S404-0.188-F1-S.3-Z4 | 3/16 | 3/8 | 3/16 | 2-1/16 | 4 | TiN |
| N35061 | S404-0.188-F2-S.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | |
| N35060 | S404-0.188-F2-S.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | TiN |
| N36061 | S404-0.188-F3-S.3-Z4 | 3/16 | 3/8 | 5/8 | 2-1/2 | 4 | |
| N36060 | S404-0.188-F3-S.3-Z4 | 3/16 | 3/8 | 5/8 | 2-1/2 | 4 | TiN |
| N37061 | S404-0.188-F4-S.3-Z4 | 3/16 | 3/8 | 3/4 | 2-5/8 | 4 | |
| N37060 | S404-0.188-F4-S.3-Z4 | 3/16 | 3/8 | 3/4 | 2-5/8 | 4 | TiN |
| N33061 | S404-0.188-F5-S.3-Z4 | 3/16 | 3/8 | 1 | 2-7/8 | 4 | |
| N33060 | S404-0.188-F5-S.3-Z4 | 3/16 | 3/8 | 1 | 2-7/8 | 4 | TiN |
| N38061 | S404-0.188-F6-S.3-Z4 | 3/16 | 3/8 | 1-1/8 | 3 | 4 | |
| N38060 | S404-0.188-F6-S.3-Z4 | 3/16 | 3/8 | 1-1/8 | 3 | 4 | TiN |
| N35069 | S404-0.203-F2-S.3-Z4 | 13/64 | 3/8 | 1/2 | 2-3/8 | 4 | |
| N35068 | S404-0.203-F2-S.3-Z4 | 13/64 | 3/8 | 1/2 | 2-3/8 | 4 | TiN |
| N35071 | S404-0.219-F2-S.3-Z4 | 7/32 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N35070 | S404-0.219-F2-S.3-Z4 | 7/32 | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N36071 | S404-0.219-F3-S.3-Z4 | 7/32 | 3/8 | 3/4 | 2-9/16 | 4 | |
| N36070 | S404-0.219-F3-S.3-Z4 | 7/32 | 3/8 | 3/4 | 2-9/16 | 4 | TiN |
| N37071 | S404-0.219-F4-S.3-Z4 | 7/32 | 3/8 | 7/8 | 2-11/16 | 4 | |
| N37070 | S404-0.219-F4-S.3-Z4 | 7/32 | 3/8 | 7/8 | 2-11/16 | 4 | TiN |
| N38071 | S404-0.219-F8-S.3-Z4 | 7/32 | 3/8 | 1-3/4 | 3-9/16 | 4 | |
| N38070 | S404-0.219-F8-S.3-Z4 | 7/32 | 3/8 | 1-3/4 | 3-9/16 | 4 | TiN |
| N35079 | S404-0.234-F3-S.3-Z4 | 15/64 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N35078 | S404-0.234-F3-S.3-Z4 | 15/64 | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N34081 | S404-0.250-F1-S.3-Z4 | 1/4 | 3/8 | 1/4 | 2-1/16 | 4 | |
| N34080 | S404-0.250-F1-S.3-Z4 | 1/4 | 3/8 | 1/4 | 2-1/16 | 4 | TiN |
| N35081 | S404-0.250-F2-S.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N35080 | S404-0.250-F2-S.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N36081 | S404-0.250-F3-S.3-Z4 | 1/4 | 3/8 | 3/4 | 2-9/16 | 4 | |
| N36080 | S404-0.250-F3-S.3-Z4 | 1/4 | 3/8 | 3/4 | 2-9/16 | 4 | TiN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- S404

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N37081 | S404-0.250-F5-S.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | |
| N37080 | S404-0.250-F5-S.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | TiN |
| N33081 | S404-0.250-F6-S.3-Z4 | 1/4 | 3/8 | 1-1/2 | 3-5/16 | 4 | |
| N33080 | S404-0.250-F6-S.3-Z4 | 1/4 | 3/8 | 1-1/2 | 3-5/16 | 4 | TiN |
| N38081 | S404-0.250-F7-S.3-Z4 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 4 | |
| N38080 | S404-0.250-F7-S.3-Z4 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 4 | TiN |
| N35089 | S404-0.266-F2-S.3-Z4 | 17/64 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N35088 | S404-0.266-F2-S.3-Z4 | 17/64 | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N35091 | S404-0.281-F2-S.3-Z4 | 9/32 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N35090 | S404-0.281-F2-S.3-Z4 | 9/32 | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N36091 | S404-0.281-F4-S.3-Z4 | 9/32 | 3/8 | 1 | 2-3/4 | 4 | |
| N36090 | S404-0.281-F4-S.3-Z4 | 9/32 | 3/8 | 1 | 2-3/4 | 4 | TiN |
| N37091 | S404-0.281-F5-S.3-Z4 | 9/32 | 3/8 | 1-3/8 | 3-1/8 | 4 | |
| N37090 | S404-0.281-F5-S.3-Z4 | 9/32 | 3/8 | 1-3/8 | 3-1/8 | 4 | TiN |
| N38091 | S404-0.281-F7-S.3-Z4 | 9/32 | 3/8 | 2 | 3-3/4 | 4 | |
| N38090 | S404-0.281-F7-S.3-Z4 | 9/32 | 3/8 | 2 | 3-3/4 | 4 | TiN |
| N35099 | S404-0.297-F3-S.3-Z4 | 19/64 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N35098 | S404-0.297-F3-S.3-Z4 | 19/64 | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N35101 | S404-0.313-F2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N35100 | S404-0.313-F2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N36101 | S404-0.313-F3-S.3-Z4 | 5/16 | 3/8 | 1 | 2-3/4 | 4 | |
| N36100 | S404-0.313-F3-S.3-Z4 | 5/16 | 3/8 | 1 | 2-3/4 | 4 | TiN |
| N37101 | S404-0.313-F4-S.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | |
| N37100 | S404-0.313-F4-S.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | TiN |
| N33101 | S404-0.313-F5-S.3-Z4 | 5/16 | 3/8 | 1-5/8 | 3-3/8 | 4 | |
| N33100 | S404-0.313-F5-S.3-Z4 | 5/16 | 3/8 | 1-5/8 | 3-3/8 | 4 | TiN |
| N38101 | S404-0.313-F6-S.3-Z4 | 5/16 | 3/8 | 2 | 3-3/4 | 4 | |
| N38100 | S404-0.313-F6-S.3-Z4 | 5/16 | 3/8 | 2 | 3-3/4 | 4 | TiN |
| N35111 | S404-0.344-F2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N35110 | S404-0.344-F2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N36111 | S404-0.344-F3-S.3-Z4 | 11/32 | 3/8 | 1-1/8 | 2-7/8 | 4 | |
| N36110 | S404-0.344-F3-S.3-Z4 | 11/32 | 3/8 | 1-1/8 | 2-7/8 | 4 | TiN |
| N37111 | S404-0.344-F4-S.3-Z4 | 11/32 | 3/8 | 1-1/2 | 3-1/4 | 4 | |
| N37110 | S404-0.344-F4-S.3-Z4 | 11/32 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiN |
| N35119 | S404-0.359-F2-S.3-Z4 | 23/64 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N35118 | S404-0.359-F2-S.3-Z4 | 23/64 | 3/8 | 3/4 | 2-1/2 | 4 | TiN |

# GENERAL PURPOSE- S404

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N34121 | S404-0.375-D1-S.3-Z4 | 3/8 | 3/8 | 3/8 | 2-1/8 | 4 | |
| N34120 | S404-0.375-D1-S.3-Z4 | 3/8 | 3/8 | 3/8 | 2-1/8 | 4 | TiN |
| N35121 | S404-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N35120 | S404-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N36121 | S404-0.375-D3-S.3-Z4 | 3/8 | 3/8 | 1-1/8 | 2-7/8 | 4 | |
| N36120 | S404-0.375-D3-S.3-Z4 | 3/8 | 3/8 | 1-1/8 | 2-7/8 | 4 | TiN |
| N37121 | S404-0.375-D4-S.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | |
| N37120 | S404-0.375-D4-S.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiN |
| N33121 | S404-0.375-D5-S.3-Z4 | 3/8 | 3/8 | 1-7/8 | 3-5/8 | 4 | |
| N33120 | S404-0.375-D5-S.3-Z4 | 3/8 | 3/8 | 1-7/8 | 3-5/8 | 4 | TiN |
| N38121 | S404-0.375-D7-S.3-Z4 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 4 | |
| N38120 | S404-0.375-D7-S.3-Z4 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 4 | TiN |
| N35129 | S404-0.391-P3-S.3-Z4 | 25/64 | 3/8 | 1 | 2-11/16 | 4 | |
| N35128 | S404-0.391-P3-S.3-Z4 | 25/64 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N35131 | S404-0.406-P2-S.3-Z4 | 13/32 | 3/8 | 1 | 2-11/16 | 4 | |
| N35130 | S404-0.406-P2-S.3-Z4 | 13/32 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N36131 | S404-0.406-P3-S.3-Z4 | 13/32 | 3/8 | 1-3/8 | 3-1/16 | 4 | |
| N36130 | S404-0.406-P3-S.3-Z4 | 13/32 | 3/8 | 1-3/8 | 3-1/16 | 4 | TiN |
| N37131 | S404-0.406-P4-S.3-Z4 | 13/32 | 3/8 | 2 | 3-11/16 | 4 | |
| N37130 | S404-0.406-P4-S.3-Z4 | 13/32 | 3/8 | 2 | 3-11/16 | 4 | TiN |
| N35139 | S404-0.422-P2-S.3-Z4 | 27/64 | 3/8 | 1 | 2-11/16 | 4 | |
| N35138 | S404-0.422-P2-S.3-Z4 | 27/64 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N34141 | S404-0.438-P1-S.3-Z4 | 7/16 | 3/8 | 7/16 | 2-1/8 | 4 | |
| N34140 | S404-0.438-P1-S.3-Z4 | 7/16 | 3/8 | 7/16 | 2-1/8 | 4 | TiN |
| N35141 | S404-0.438-P2-S.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | |
| N35140 | S404-0.438-P2-S.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N36141 | S404-0.438-P3-S.3-Z4 | 7/16 | 3/8 | 1-3/8 | 3-1/16 | 4 | |
| N36140 | S404-0.438-P3-S.3-Z4 | 7/16 | 3/8 | 1-3/8 | 3-1/16 | 4 | TiN |
| N37141 | S404-0.438-P4-S.3-Z4 | 7/16 | 3/8 | 2 | 3-11/16 | 4 | |
| N37140 | S404-0.438-P4-S.3-Z4 | 7/16 | 3/8 | 2 | 3-11/16 | 4 | TiN |
| N33141 | S404-0.438-P5-S.3-Z4 | 7/16 | 3/8 | 2-1/4 | 3-15/16 | 4 | |
| N33140 | S404-0.438-P5-S.3-Z4 | 7/16 | 3/8 | 2-1/4 | 3-15/16 | 4 | TiN |
| N38141 | S404-0.438-P6-S.3-Z4 | 7/16 | 3/8 | 2-5/8 | 4-5/16 | 4 | |
| N38140 | S404-0.438-P6-S.3-Z4 | 7/16 | 3/8 | 2-5/8 | 4-5/16 | 4 | TiN |
| N37142 | S404-0.438-F4-S.3-Z4 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 4 | |
| N37148 | S404-0.438-F4-S.3-Z4 | 7/16 | 1/2 | 1-3/4 | 3-3/4 | 4 | TiN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- S404

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N35149 | S404-0.453-P2-S.3-Z4 | 29/64 | 3/8 | 1 | 2-11/16 | 4 | |
| N35148 | S404-0.453-P2-S.3-Z4 | 29/64 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N35151 | S404-0.469-P2-S.3-Z4 | 15/32 | 3/8 | 1 | 2-11/16 | 4 | |
| N35150 | S404-0.469-P2-S.3-Z4 | 15/32 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N35159 | S404-0.484-P2-S.3-Z4 | 31/64 | 3/8 | 1 | 2-11/16 | 4 | |
| N35158 | S404-0.484-P2-S.3-Z4 | 31/64 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N35161 | S404-0.500-P2-S.3-Z4 | 1/2 | 3/8 | 1 | 2-11/16 | 4 | |
| N35167 | S404-0.500-P2-S.3-Z4 | 1/2 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N34162 | S404-0.500-D1-S.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | |
| N34160 | S404-0.500-D1-S.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | TiN |
| N35162 | S404-0.500-D2-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N35160 | S404-0.500-D2-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiN |
| N36162 | S404-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/2 | 3-1/2 | 4 | |
| N36160 | S404-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/2 | 3-1/2 | 4 | TiN |
| N37162 | S404-0.500-D4-S.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | |
| N37160 | S404-0.500-D4-S.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiN |
| N33162 | S404-0.500-D5-S.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | |
| N33160 | S404-0.500-D5-S.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiN |
| N38162 | S404-0.500-D6-S.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | |
| N38160 | S404-0.500-D6-S.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | TiN |
| N35169 | S404-0.516-P2-S.3-Z4 | 33/64 | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N35168 | S404-0.516-P2-S.3-Z4 | 33/64 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiN |
| N35172 | S404-0.531-P3-S.3-Z4 | 17/32 | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N35170 | S404-0.531-P3-S.3-Z4 | 17/32 | 1/2 | 1-3/8 | 3-3/8 | 4 | TiN |
| N37172 | S404-0.531-P5-S.3-Z4 | 17/32 | 1/2 | 2-1/2 | 4-1/2 | 4 | |
| N37170 | S404-0.531-P5-S.3-Z4 | 17/32 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiN |
| N35179 | S404-0.547-P3-S.3-Z4 | 35/64 | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N35178 | S404-0.547-P3-S.3-Z4 | 35/64 | 1/2 | 1-3/8 | 3-3/8 | 4 | TiN |
| N34182 | S404-0.563-P1-S.3-Z4 | 9/16 | 1/2 | 5/8 | 2-5/8 | 4 | |
| N34180 | S404-0.563-P1-S.3-Z4 | 9/16 | 1/2 | 5/8 | 2-5/8 | 4 | TiN |
| N35182 | S404-0.563-P2-S.3-Z4 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N35180 | S404-0.563-P2-S.3-Z4 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 4 | TiN |
| N36182 | S404-0.563-P3-S.3-Z4 | 9/16 | 1/2 | 1-7/8 | 3-7/8 | 4 | |
| N36180 | S404-0.563-P3-S.3-Z4 | 9/16 | 1/2 | 1-7/8 | 3-7/8 | 4 | TiN |
| N37182 | S404-0.563-P4-S.3-Z4 | 9/16 | 1/2 | 2-1/2 | 4-1/2 | 4 | |
| N37180 | S404-0.563-P4-S.3-Z4 | 9/16 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiN |

# GENERAL PURPOSE- S404

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N38182 | S404-0.563-P7-S.3-Z4 | 9/16 | 1/2 | 4 | 6 | 4 | |
| N38180 | S404-0.563-P7-S.3-Z4 | 9/16 | 1/2 | 4 | 6 | 4 | TiN |
| N35189 | S404-0.578-P2-S.3-Z4 | 37/64 | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N35188 | S404-0.578-P2-S.3-Z4 | 37/64 | 1/2 | 1-3/8 | 3-3/8 | 4 | TiN |
| N35192 | S404-0.594-P2-S.3-Z4 | 19/32 | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N35190 | S404-0.594-P2-S.3-Z4 | 19/32 | 1/2 | 1-3/8 | 3-3/8 | 4 | TiN |
| N35199 | S404-0.609-F3-S.3-Z4 | 39/64 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N35198 | S404-0.609-F3-S.3-Z4 | 39/64 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N35202 | S404-0.625-P2-S.3-Z4 | 5/8 | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N35207 | S404-0.625-P2-S.3-Z4 | 5/8 | 1/2 | 1-3/8 | 3-3/8 | 4 | TiN |
| N34203 | S404-0.625-D1-S.3-Z4 | 5/8 | 5/8 | 5/8 | 2-3/4 | 4 | |
| N34200 | S404-0.625-D1-S.3-Z4 | 5/8 | 5/8 | 5/8 | 2-3/4 | 4 | TiN |
| N35203 | S404-0.625-D2-S.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N35200 | S404-0.625-D2-S.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N36203 | S404-0.625-D3-S.3-Z4 | 5/8 | 5/8 | 1-7/8 | 4 | 4 | |
| N36200 | S404-0.625-D3-S.3-Z4 | 5/8 | 5/8 | 1-7/8 | 4 | 4 | TiN |
| N37203 | S404-0.625-D4-S.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | |
| N37200 | S404-0.625-D4-S.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | TiN |
| N38203 | S404-0.625-D6-S.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | |
| N38200 | S404-0.625-D6-S.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | TiN |
| N35209 | S404-0.641-P3-S.3-Z4 | 41/64 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N35208 | S404-0.641-P3-S.3-Z4 | 41/64 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N35213 | S404-0.656-P2-S.3-Z4 | 21/32 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N35210 | S404-0.656-P2-S.3-Z4 | 21/32 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N35219 | S404-0.672-P2-S.3-Z4 | 43/64 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N35218 | S404-0.672-P2-S.3-Z4 | 43/64 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N35222 | S404-0.688-P1-S.3-Z4 | 11/16 | 1/2 | 1-5/8 | 3-5/8 | 4 | |
| N35227 | S404-0.688-P1-S.3-Z4 | 11/16 | 1/2 | 1-5/8 | 3-5/8 | 4 | TiN |
| N35223 | S404-0.688-P3-S.3-Z4 | 11/16 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N35220 | S404-0.688-P3-S.3-Z4 | 11/16 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N36223 | S404-0.688-P4-S.3-Z4 | 11/16 | 5/8 | 2-1/4 | 4-3/8 | 4 | |
| N36220 | S404-0.688-P4-S.3-Z4 | 11/16 | 5/8 | 2-1/4 | 4-3/8 | 4 | TiN |
| N37223 | S404-0.688-P5-S.3-Z4 | 11/16 | 5/8 | 3 | 5-1/8 | 4 | |
| N37220 | S404-0.688-P5-S.3-Z4 | 11/16 | 5/8 | 3 | 5-1/8 | 4 | TiN |
| N38223 | S404-0.688-P7-S.3-Z4 | 11/16 | 5/8 | 4 | 6-1/8 | 4 | |
| N38220 | S404-0.688-P7-S.3-Z4 | 11/16 | 5/8 | 4 | 6-1/8 | 4 | TiN |

# GENERAL PURPOSE- S404

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N35229 | S404-0.703-F2-S.3-Z4 | 45/64 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N35228 | S404-0.703-F2-S.3-Z4 | 45/64 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiN |
| N35234 | S404-0.719-F2-S.3-Z4 | 23/32 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N35230 | S404-0.719-F2-S.3-Z4 | 23/32 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiN |
| N35239 | S404-0.734-F2-S.3-Z4 | 47/64 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N35238 | S404-0.734-F2-S.3-Z4 | 47/64 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiN |
| N87242 | S404-0.750-P1-S.3-Z4 | 3/4 | 1/2 | 3/4 | 2-3/4 | 4 | |
| N87240 | S404-0.750-P1-S.3-Z4 | 3/4 | 1/2 | 3/4 | 2-3/4 | 4 | TiN |
| N35242 | S404-0.750-P2-S.3-Z4 | 3/4 | 1/2 | 1-5/8 | 3-5/8 | 4 | |
| N35241 | S404-0.750-P2-S.3-Z4 | 3/4 | 1/2 | 1-5/8 | 3-5/8 | 4 | TiN |
| N37242 | S404-0.750-P4-S.3-Z4 | 3/4 | 1/2 | 3 | 5 | 4 | |
| N37248 | S404-0.750-P4-S.3-Z4 | 3/4 | 1/2 | 3 | 5 | 4 | TiN |
| N35243 | S404-0.750-P3-S.3-Z4 | 3/4 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N35247 | S404-0.750-P3-S.3-Z4 | 3/4 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N34244 | S404-0.750-D1-S.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | |
| N34240 | S404-0.750-D1-S.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | TiN |
| N35246 | S404-0.750-D2-S.3-Z6 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 6 | |
| N35255 | S404-0.750-D2-S.3-Z6 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 6 | TiN |
| N35244 | S404-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N35240 | S404-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiN |
| N36244 | S404-0.750-D3-S.3-Z4 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 4 | |
| N36240 | S404-0.750-D3-S.3-Z4 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 4 | TiN |
| N37244 | S404-0.750-D4-S.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | |
| N37240 | S404-0.750-D4-S.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiN |
| N33244 | S404-0.750-D5-S.3-Z4 | 3/4 | 3/4 | 3-1/2 | 5-3/4 | 4 | |
| N33240 | S404-0.750-D5-S.3-Z4 | 3/4 | 3/4 | 3-1/2 | 5-3/4 | 4 | TiN |
| N38244 | S404-0.750-D6-S.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | |
| N38240 | S404-0.750-D6-S.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | TiN |
| N35249 | S404-0.766-P2-S.3-Z4 | 49/64 | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N35248 | S404-0.766-P2-S.3-Z4 | 49/64 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiN |
| N35254 | S404-0.781-P2-S.3-Z4 | 25/32 | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N35250 | S404-0.781-P2-S.3-Z4 | 25/32 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiN |
| N35259 | S404-0.797-P2-S.3-Z4 | 51/64 | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N35258 | S404-0.797-P2-S.3-Z4 | 51/64 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiN |
| N35263 | S404-0.813-P2-S.3-Z6 | 13/16 | 5/8 | 1-7/8 | 4 | 6 | |
| N35267 | S404-0.813-P2-S.3-Z6 | 13/16 | 5/8 | 1-7/8 | 4 | 6 | TiN |

DISCOUNT CODE D40

# GENERAL PURPOSE- S404

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N35264 | S404-0.813-P2-S.3-Z4 | 13/16 | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N35260 | S404-0.813-P2-S.3-Z4 | 13/16 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiN |
| N36264 | S404-0.813-P3-S.3-Z4 | 13/16 | 3/4 | 2-5/8 | 4-7/8 | 4 | |
| N36260 | S404-0.813-P3-S.3-Z4 | 13/16 | 3/4 | 2-5/8 | 4-7/8 | 4 | TiN |
| N37264 | S404-0.813-P4-S.3-Z4 | 13/16 | 3/4 | 3-1/2 | 5-3/4 | 4 | |
| N37260 | S404-0.813-P4-S.3-Z4 | 13/16 | 3/4 | 3-1/2 | 5-3/4 | 4 | TiN |
| N35269 | S404-0.828-F2-S.3-Z4 | 53/64 | 7/8 | 1-7/8 | 4-1/8 | 4 | |
| N35268 | S404-0.828-F2-S.3-Z4 | 53/64 | 7/8 | 1-7/8 | 4-1/8 | 4 | TiN |
| N35275 | S404-0.844-F2-S.3-Z4 | 27/32 | 7/8 | 1-7/8 | 4-1/8 | 4 | |
| N35270 | S404-0.844-F2-S.3-Z4 | 27/32 | 7/8 | 1-7/8 | 4-1/8 | 4 | TiN |
| N35279 | S404-0.859-F2-S.3-Z4 | 55/64 | 7/8 | 1-7/8 | 4-1/8 | 4 | |
| N35278 | S404-0.859-F2-S.3-Z4 | 55/64 | 7/8 | 1-7/8 | 4-1/8 | 4 | TiN |
| N87282 | S404-0.875-P1-S.3-Z4 | 7/8 | 1/2 | 7/8 | 2-7/8 | 4 | |
| N87280 | S404-0.875-P1-S.3-Z4 | 7/8 | 1/2 | 7/8 | 2-7/8 | 4 | TiN |
| N35283 | S404-0.875-P2-S.3-Z6 | 7/8 | 5/8 | 1-7/8 | 4 | 6 | |
| N35281 | S404-0.875-P2-S.3-Z6 | 7/8 | 5/8 | 1-7/8 | 4 | 6 | TiN |
| N35284 | S404-0.875-P2-S.3-Z4 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N35287 | S404-0.875-P2-S.3-Z4 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiN |
| N35285 | S404-0.875-D2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 4 | |
| N35280 | S404-0.875-D2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 4 | TiN |
| N36285 | S404-0.875-D3-S.3-Z4 | 7/8 | 7/8 | 2-5/8 | 4-7/8 | 4 | |
| N36280 | S404-0.875-D3-S.3-Z4 | 7/8 | 7/8 | 2-5/8 | 4-7/8 | 4 | TiN |
| N37285 | S404-0.875-D4-S.3-Z4 | 7/8 | 7/8 | 3-1/2 | 5-3/4 | 4 | |
| N37280 | S404-0.875-D4-S.3-Z4 | 7/8 | 7/8 | 3-1/2 | 5-3/4 | 4 | TiN |
| N33285 | S404-0.875-D5-S.3-Z4 | 7/8 | 7/8 | 4-3/8 | 6-5/8 | 4 | |
| N33280 | S404-0.875-D5-S.3-Z4 | 7/8 | 7/8 | 4-3/8 | 6-5/8 | 4 | TiN |
| N38285 | S404-0.875-D6-S.3-Z4 | 7/8 | 7/8 | 5 | 7-1/4 | 4 | |
| N38280 | S404-0.875-D6-S.3-Z4 | 7/8 | 7/8 | 5 | 7-1/4 | 4 | TiN |
| N35295 | S404-0.906-P2-S.3-Z4 | 29/32 | 7/8 | 1-7/8 | 4-1/8 | 4 | |
| N35290 | S404-0.906-P2-S.3-Z4 | 29/32 | 7/8 | 1-7/8 | 4-1/8 | 4 | TiN |
| N35304 | S404-0.938-P1-S.3-Z4 | 15/16 | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N35302 | S404-0.938-P1-S.3-Z4 | 15/16 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiN |
| N35323 | S404-1.000-P2-S.3-Z6 | 1 | 5/8 | 1-7/8 | 4 | 6 | |
| N35322 | S404-1.000-P2-S.3-Z6 | 1 | 5/8 | 1-7/8 | 4 | 6 | TiN |
| N87324 | S404-1.000-P1-S.3-Z4 | 1 | 3/4 | 1-1/4 | 3-1/2 | 4 | |
| N87323 | S404-1.000-P1-S.3-Z4 | 1 | 3/4 | 1-1/4 | 3-1/2 | 4 | TiN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- S404

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N87328 | S404-1.000-P3-S.3-Z6 | 1 | 3/4 | 1-1/4 | 3-1/2 | 6 | |
| N87327 | S404-1.000-P3-S.3-Z6 | 1 | 3/4 | 1-1/4 | 3-1/2 | 6 | TiN |
| N35324 | S404-1.000-P3-S.3-Z4 | 1 | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N35321 | S404-1.000-P3-S.3-Z4 | 1 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiN |
| N34326 | S404-1.000-D1-S.3-Z4 | 1 | 1 | 1 | 3-1/2 | 4 | |
| N34320 | S404-1.000-D1-S.3-Z4 | 1 | 1 | 1 | 3-1/2 | 4 | TiN |
| N35326 | S404-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | |
| N35320 | S404-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | TiN |
| N36326 | S404-1.000-D3-S.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | |
| N36320 | S404-1.000-D3-S.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | TiN |
| N37326 | S404-1.000-D4-S.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | |
| N37320 | S404-1.000-D4-S.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | TiN |
| N33326 | S404-1.000-D5-S.3-Z4 | 1 | 1 | 5 | 7-1/2 | 4 | |
| N33320 | S404-1.000-D5-S.3-Z4 | 1 | 1 | 5 | 7-1/2 | 4 | TiN |
| N38326 | S404-1.000-D6-S.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | |
| N38320 | S404-1.000-D6-S.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | TiN |
| N35344 | S404-1.063-P2-S.3-Z6 | 1-1/16 | 3/4 | 2 | 4-1/4 | 6 | |
| N35348 | S404-1.063-P2-S.3-Z6 | 1-1/16 | 3/4 | 2 | 4-1/4 | 6 | TiN |
| N35346 | S404-1.063-P3-S.3-Z6 | 1-1/16 | 1 | 2 | 4-1/2 | 6 | |
| N35340 | S404-1.063-P3-S.3-Z6 | 1-1/16 | 1 | 2 | 4-1/2 | 6 | TiN |
| N87364 | S404-1.125-P2-S.3-Z6 | 1-1/8 | 3/4 | 1-1/4 | 3-1/2 | 6 | |
| N87363 | S404-1.125-P2-S.3-Z6 | 1-1/8 | 3/4 | 1-1/4 | 3-1/2 | 6 | TiN |
| N35364 | S404-1.125-P3-S.3-Z6 | 1-1/8 | 3/4 | 2 | 4-1/4 | 6 | |
| N35361 | S404-1.125-P3-S.3-Z6 | 1-1/8 | 3/4 | 2 | 4-1/4 | 6 | TiN |
| N35365 | S404-1.125-P4-S.3-Z6 | 1-1/8 | 7/8 | 2 | 4-1/4 | 6 | |
| N35362 | S404-1.125-P4-S.3-Z6 | 1-1/8 | 7/8 | 2 | 4-1/4 | 6 | TiN |
| N35366 | S404-1.125-P5-S.3-Z6 | 1-1/8 | 1 | 2 | 4-1/2 | 6 | |
| N35360 | S404-1.125-P5-S.3-Z6 | 1-1/8 | 1 | 2 | 4-1/2 | 6 | TiN |
| N37366 | S404-1.125-P6-S.3-Z6 | 1-1/8 | 1 | 4 | 6-1/2 | 6 | |
| N37360 | S404-1.125-P6-S.3-Z6 | 1-1/8 | 1 | 4 | 6-1/2 | 6 | TiN |
| N35384 | S404-1.188-P1-S.3-Z6 | 1-3/16 | 3/4 | 2 | 4-1/4 | 6 | |
| N35381 | S404-1.188-P1-S.3-Z6 | 1-3/16 | 3/4 | 2 | 4-1/4 | 6 | TiN |
| N35386 | S404-1.188-P2-S.3-Z6 | 1-3/16 | 1 | 2 | 4-1/2 | 6 | |
| N35380 | S404-1.188-P2-S.3-Z6 | 1-3/16 | 1 | 2 | 4-1/2 | 6 | TiN |
| N87404 | S404-1.250-P2-S.3-Z6 | 1-1/4 | 3/4 | 1-1/4 | 3-1/2 | 6 | |
| N87403 | S404-1.250-P2-S.3-Z6 | 1-1/4 | 3/4 | 1-1/4 | 3-1/2 | 6 | TiN |

# GENERAL PURPOSE- S404

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N35404 | S404-1.250-P3-S.3-Z6 | 1-1/4 | 3/4 | 2 | 4-1/4 | 6 | |
| N35402 | S404-1.250-P3-S.3-Z6 | 1-1/4 | 3/4 | 2 | 4-1/4 | 6 | TiN |
| N35406 | S404-1.250-P5-S.3-Z6 | 1-1/4 | 1 | 2 | 4-1/2 | 6 | |
| N35401 | S404-1.250-P5-S.3-Z6 | 1-1/4 | 1 | 2 | 4-1/2 | 6 | TiN |
| N37406 | S404-1.250-P7-S.3-Z6 | 1-1/4 | 1 | 4 | 6-1/2 | 6 | |
| N37401 | S404-1.250-P7-S.3-Z6 | 1-1/4 | 1 | 4 | 6-1/2 | 6 | TiN |
| N35407 | S404-1.250-D1-S.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N35400 | S404-1.250-D1-S.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | TiN |
| N36407 | S404-1.250-D2-S.3-Z4 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 4 | |
| N36400 | S404-1.250-D2-S.3-Z4 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 4 | TiN |
| N37407 | S404-1.250-D3-S.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N37400 | S404-1.250-D3-S.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | TiN |
| N38407 | S404-1.250-D5-S.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | |
| N38400 | S404-1.250-D5-S.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | TiN |
| N35426 | S404-1.313-P2-S.3-Z6 | 1-5/16 | 1 | 2 | 4-1/2 | 6 | |
| N35420 | S404-1.313-P2-S.3-Z6 | 1-5/16 | 1 | 2 | 4-1/2 | 6 | TiN |
| N87444 | S404-1.375-P1-S.3-Z6 | 1-3/8 | 3/4 | 1-1/4 | 3-1/2 | 6 | |
| N87443 | S404-1.375-P1-S.3-Z6 | 1-3/8 | 3/4 | 1-1/4 | 3-1/2 | 6 | TiN |
| N35444 | S404-1.375-P2-S.3-Z6 | 1-3/8 | 3/4 | 2 | 4-1/4 | 6 | |
| N35448 | S404-1.375-P2-S.3-Z6 | 1-3/8 | 3/4 | 2 | 4-1/4 | 6 | TiN |
| N35446 | S404-1.375-P3-S.3-Z6 | 1-3/8 | 1 | 2 | 4-1/2 | 6 | |
| N35440 | S404-1.375-P3-S.3-Z6 | 1-3/8 | 1 | 2 | 4-1/2 | 6 | TiN |
| N37446 | S404-1.375-P4-S.3-Z6 | 1-3/8 | 1 | 4 | 6-1/2 | 6 | |
| N37440 | S404-1.375-P4-S.3-Z6 | 1-3/8 | 1 | 4 | 6-1/2 | 6 | TiN |
| N87484 | S404-1.500-P1-S.3-Z6 | 1-1/2 | 3/4 | 1-1/4 | 3-1/2 | 6 | |
| N87483 | S404-1.500-P1-S.3-Z6 | 1-1/2 | 3/4 | 1-1/4 | 3-1/2 | 6 | TiN |
| N35484 | S404-1.500-P2-S.3-Z6 | 1-1/2 | 3/4 | 2 | 4-1/4 | 6 | |
| N35482 | S404-1.500-P2-S.3-Z6 | 1-1/2 | 3/4 | 2 | 4-1/4 | 6 | TiN |
| N35486 | S404-1.500-P3-S.3-Z6 | 1-1/2 | 1 | 2 | 4-1/2 | 6 | |
| N35481 | S404-1.500-P3-S.3-Z6 | 1-1/2 | 1 | 2 | 4-1/2 | 6 | TiN |
| N35487 | S404-1.500-P4-S.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N35480 | S404-1.500-P4-S.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | TiN |
| N36487 | S404-1.500-P5-S.3-Z4 | 1-1/2 | 1-1/4 | 3 | 5-1/2 | 4 | |
| N36480 | S404-1.500-P5-S.3-Z4 | 1-1/2 | 1-1/4 | 3 | 5-1/2 | 4 | TiN |
| N37487 | S404-1.500-P6-S.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N37480 | S404-1.500-P6-S.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | TiN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- S404

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N38487 | S404-1.500-P7-S.3-Z6 | 1-1/2 | 1-1/4 | 8 | 10-1/2 | 6 | |
| N38480 | S404-1.500-P7-S.3-Z6 | 1-1/2 | 1-1/4 | 8 | 10-1/2 | 6 | TiN |
| N35507 | S404-1.563-P1-S.3-Z6 | 1-9/16 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N35500 | S404-1.563-P1-S.3-Z6 | 1-9/16 | 1-1/4 | 2 | 4-1/2 | 6 | TiN |
| N35527 | S404-1.625-P1-S.3-Z6 | 1-5/8 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N35520 | S404-1.625-P1-S.3-Z6 | 1-5/8 | 1-1/4 | 2 | 4-1/2 | 6 | TiN |
| N37527 | S404-1.625-P2-S.3-Z6 | 1-5/8 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N37520 | S404-1.625-P2-S.3-Z6 | 1-5/8 | 1-1/4 | 4 | 6-1/2 | 6 | TiN |
| N35564 | S404-1.750-P1-S.3-Z6 | 1-3/4 | 3/4 | 2 | 4-1/4 | 6 | |
| N35561 | S404-1.750-P1-S.3-Z6 | 1-3/4 | 3/4 | 2 | 4-1/4 | 6 | TiN |
| N87566 | S404-1.750-P1-S.3-Z8 | 1-3/4 | 1 | 1-1/4 | 3-3/4 | 8 | |
| N87560 | S404-1.750-P1-S.3-Z8 | 1-3/4 | 1 | 1-1/4 | 3-3/4 | 8 | TiN |
| N35567 | S404-1.750-P2-S.3-Z6 | 1-3/4 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N35560 | S404-1.750-P2-S.3-Z6 | 1-3/4 | 1-1/4 | 2 | 4-1/2 | 6 | TiN |
| N35607 | S404-1.875-P1-S.3-Z6 | 1-7/8 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N35600 | S404-1.875-P1-S.3-Z6 | 1-7/8 | 1-1/4 | 2 | 4-1/2 | 6 | TiN |
| N37607 | S404-1.875-P2-S.3-Z6 | 1-7/8 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N37600 | S404-1.875-P2-S.3-Z6 | 1-7/8 | 1-1/4 | 4 | 6-1/2 | 6 | TiN |
| N35644 | S404-2.000-P1-S.3-Z8 | 2 | 3/4 | 2 | 4-1/4 | 8 | |
| N35641 | S404-2.000-P1-S.3-Z8 | 2 | 3/4 | 2 | 4-1/4 | 8 | TiN |
| N35647 | S404-2.000-P3-S.3-Z8 | 2 | 1-1/4 | 2 | 4-1/2 | 8 | |
| N35640 | S404-2.000-P3-S.3-Z8 | 2 | 1-1/4 | 2 | 4-1/2 | 8 | TiN |
| N36647 | S404-2.000-P5-S.3-Z4 | 2 | 1-1/4 | 3 | 5-1/2 | 4 | |
| N36640 | S404-2.000-P5-S.3-Z4 | 2 | 1-1/4 | 3 | 5-1/2 | 4 | TiN |
| N37647 | S404-2.000-P7-S.3-Z8 | 2 | 1-1/4 | 4 | 6-1/2 | 8 | |
| N37640 | S404-2.000-P7-S.3-Z8 | 2 | 1-1/4 | 4 | 6-1/2 | 8 | TiN |

# GENERAL PURPOSE- SC406

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N40041 | SC406-0.125-F3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 2-5/16 | 4 | |
| N40040 | SC406-0.125-F3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 2-5/16 | 4 | TiN |
| N40051 | SC406-0.156-F3-S.3-Z4 | 5/32 | 3/8 | 1/2 | 2-3/8 | 4 | |
| N40050 | SC406-0.156-F3-S.3-Z4 | 5/32 | 3/8 | 1/2 | 2-3/8 | 4 | TiN |
| N39061 | SC406-0.188-F1-S.3-Z4 | 3/16 | 3/8 | 3/16 | 2-1/16 | 4 | |
| N39060 | SC406-0.188-F1-S.3-Z4 | 3/16 | 3/8 | 3/16 | 2-1/16 | 4 | TiN |
| N40061 | SC406-0.188-F2-S.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | |
| N40060 | SC406-0.188-F2-S.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | TiN |
| N41061 | SC406-0.188-F3-S.3-Z4 | 3/16 | 3/8 | 5/8 | 2-1/2 | 4 | |
| N41060 | SC406-0.188-F3-S.3-Z4 | 3/16 | 3/8 | 5/8 | 2-1/2 | 4 | TiN |
| N42061 | SC406-0.188-F4-S.3-Z4 | 3/16 | 3/8 | 3/4 | 2-5/8 | 4 | |
| N42060 | SC406-0.188-F4-S.3-Z4 | 3/16 | 3/8 | 3/4 | 2-5/8 | 4 | TiN |
| N43061 | SC406-0.188-F5-S.3-Z4 | 3/16 | 3/8 | 1 | 2-7/8 | 4 | |
| N43060 | SC406-0.188-F5-S.3-Z4 | 3/16 | 3/8 | 1 | 2-7/8 | 4 | TiN |
| N44061 | SC406-0.188-F6-S.3-Z4 | 3/16 | 3/8 | 1-1/8 | 3 | 4 | |
| N44060 | SC406-0.188-F6-S.3-Z4 | 3/16 | 3/8 | 1-1/8 | 3 | 4 | TiN |
| N40071 | SC406-0.219-F2-S.3-Z4 | 7/32 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N40070 | SC406-0.219-F2-S.3-Z4 | 7/32 | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N42071 | SC406-0.219-F4-S.3-Z4 | 7/32 | 3/8 | 7/8 | 2-11/16 | 4 | |
| N42070 | SC406-0.219-F4-S.3-Z4 | 7/32 | 3/8 | 7/8 | 2-11/16 | 4 | TiN |
| N43071 | SC406-0.219-F6-S.3-Z4 | 7/32 | 3/8 | 1-1/4 | 3-1/16 | 4 | |
| N43070 | SC406-0.219-F6-S.3-Z4 | 7/32 | 3/8 | 1-1/4 | 3-1/16 | 4 | TiN |
| N44071 | SC406-0.219-F8-S.3-Z4 | 7/32 | 3/8 | 1-3/4 | 3-9/16 | 4 | |
| N44070 | SC406-0.219-F8-S.3-Z4 | 7/32 | 3/8 | 1-3/4 | 3-9/16 | 4 | TiN |
| N39081 | SC406-0.250-F1-S.3-Z4 | 1/4 | 3/8 | 1/4 | 2-1/16 | 4 | |
| N39080 | SC406-0.250-F1-S.3-Z4 | 1/4 | 3/8 | 1/4 | 2-1/16 | 4 | TiN |
| N40081 | SC406-0.250-F3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N40080 | SC406-0.250-F3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N41081 | SC406-0.250-F4-S.3-Z4 | 1/4 | 3/8 | 3/4 | 2-9/16 | 4 | |
| N41080 | SC406-0.250-F4-S.3-Z4 | 1/4 | 3/8 | 3/4 | 2-9/16 | 4 | TiN |
| N42081 | SC406-0.250-F5-S.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | |
| N42080 | SC406-0.250-F5-S.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | TiN |
| N43081 | SC406-0.250-F6-S.3-Z4 | 1/4 | 3/8 | 1-1/2 | 3-5/16 | 4 | |
| N43080 | SC406-0.250-F6-S.3-Z4 | 1/4 | 3/8 | 1-1/2 | 3-5/16 | 4 | TiN |
| N44081 | SC406-0.250-F7-S.3-Z4 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 4 | |
| N44080 | SC406-0.250-F7-S.3-Z4 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 4 | TiN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- SC406

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N39091 | SC406-0.281-F1-S.3-Z4 | 9/32 | 3/8 | 5/16 | 2-1/8 | 4 | |
| N39090 | SC406-0.281-F1-S.3-Z4 | 9/32 | 3/8 | 5/16 | 2-1/8 | 4 | TiN |
| N40091 | SC406-0.281-F2-S.3-Z4 | 9/32 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N40090 | SC406-0.281-F2-S.3-Z4 | 9/32 | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N41091 | SC406-0.281-F4-S.3-Z4 | 9/32 | 3/8 | 1 | 2-3/4 | 4 | |
| N41090 | SC406-0.281-F4-S.3-Z4 | 9/32 | 3/8 | 1 | 2-3/4 | 4 | TiN |
| N42091 | SC406-0.281-F5-S.3-Z4 | 9/32 | 3/8 | 1-3/8 | 3-1/8 | 4 | |
| N42090 | SC406-0.281-F5-S.3-Z4 | 9/32 | 3/8 | 1-3/8 | 3-1/8 | 4 | TiN |
| N44091 | SC406-0.281-F7-S.3-Z4 | 9/32 | 3/8 | 2 | 3-3/4 | 4 | |
| N44090 | SC406-0.281-F7-S.3-Z4 | 9/32 | 3/8 | 2 | 3-3/4 | 4 | TiN |
| N39101 | SC406-0.313-F1-S.3-Z4 | 5/16 | 3/8 | 5/16 | 2-1/16 | 4 | |
| N39100 | SC406-0.313-F1-S.3-Z4 | 5/16 | 3/8 | 5/16 | 2-1/16 | 4 | TiN |
| N40101 | SC406-0.313-F2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N40100 | SC406-0.313-F2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N41101 | SC406-0.313-F3-S.3-Z4 | 5/16 | 3/8 | 1 | 2-3/4 | 4 | |
| N41100 | SC406-0.313-F3-S.3-Z4 | 5/16 | 3/8 | 1 | 2-3/4 | 4 | TiN |
| N42101 | SC406-0.313-F4-S.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | |
| N42100 | SC406-0.313-F4-S.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | TiN |
| N43101 | SC406-0.313-F5-S.3-Z4 | 5/16 | 3/8 | 1-5/8 | 3-3/8 | 4 | |
| N43100 | SC406-0.313-F5-S.3-Z4 | 5/16 | 3/8 | 1-5/8 | 3-3/8 | 4 | TiN |
| N44101 | SC406-0.313-F6-S.3-Z4 | 5/16 | 3/8 | 2 | 3-3/4 | 4 | |
| N44100 | SC406-0.313-F6-S.3-Z4 | 5/16 | 3/8 | 2 | 3-3/4 | 4 | TiN |
| N40111 | SC406-0.344-F2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N40110 | SC406-0.344-F2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N41111 | SC406-0.344-F3-S.3-Z4 | 11/32 | 3/8 | 1-1/8 | 2-7/8 | 4 | |
| N41110 | SC406-0.344-F3-S.3-Z4 | 11/32 | 3/8 | 1-1/8 | 2-7/8 | 4 | TiN |
| N42111 | SC406-0.344-F4-S.3-Z4 | 11/32 | 3/8 | 1-1/2 | 3-1/4 | 4 | |
| N42110 | SC406-0.344-F4-S.3-Z4 | 11/32 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiN |
| N44111 | SC406-0.344-F7-S.3-Z4 | 11/32 | 3/8 | 2-1/2 | 4-1/4 | 4 | |
| N44110 | SC406-0.344-F7-S.3-Z4 | 11/32 | 3/8 | 2-1/2 | 4-1/4 | 4 | TiN |
| N39121 | SC406-0.375-D1-S.3-Z4 | 3/8 | 3/8 | 3/8 | 2-1/8 | 4 | |
| N39120 | SC406-0.375-D1-S.3-Z4 | 3/8 | 3/8 | 3/8 | 2-1/8 | 4 | TiN |
| N40121 | SC406-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N40120 | SC406-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N41121 | SC406-0.375-D3-S.3-Z4 | 3/8 | 3/8 | 1-1/8 | 2-7/8 | 4 | |
| N41120 | SC406-0.375-D3-S.3-Z4 | 3/8 | 3/8 | 1-1/8 | 2-7/8 | 4 | TiN |

DISCOUNT CODE D40

# GENERAL PURPOSE- SC406

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N42121 | SC406-0.375-D4-S.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | |
| N42120 | SC406-0.375-D4-S.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiN |
| N43121 | SC406-0.375-D5-S.3-Z4 | 3/8 | 3/8 | 1-7/8 | 3-5/8 | 4 | |
| N43120 | SC406-0.375-D5-S.3-Z4 | 3/8 | 3/8 | 1-7/8 | 3-5/8 | 4 | TiN |
| N44121 | SC406-0.375-D7-S.3-Z4 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 4 | |
| N44120 | SC406-0.375-D7-S.3-Z4 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 4 | TiN |
| N39131 | SC406-0.406-P1-S.3-Z4 | 13/32 | 3/8 | 7/16 | 2-1/8 | 4 | |
| N39130 | SC406-0.406-P1-S.3-Z4 | 13/32 | 3/8 | 7/16 | 2-1/8 | 4 | TiN |
| N40131 | SC406-0.406-P2-S.3-Z4 | 13/32 | 3/8 | 1 | 2-11/16 | 4 | |
| N40130 | SC406-0.406-P2-S.3-Z4 | 13/32 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N41131 | SC406-0.406-P3-S.3-Z4 | 13/32 | 3/8 | 1-3/8 | 3-1/16 | 4 | |
| N41130 | SC406-0.406-P3-S.3-Z4 | 13/32 | 3/8 | 1-3/8 | 3-1/16 | 4 | TiN |
| N42131 | SC406-0.406-P5-S.3-Z4 | 13/32 | 3/8 | 2 | 3-11/16 | 4 | |
| N42130 | SC406-0.406-P5-S.3-Z4 | 13/32 | 3/8 | 2 | 3-11/16 | 4 | TiN |
| N44131 | SC406-0.406-P7-S.3-Z4 | 13/32 | 3/8 | 2-5/8 | 4-5/16 | 4 | |
| N44130 | SC406-0.406-P7-S.3-Z4 | 13/32 | 3/8 | 2-5/8 | 4-5/16 | 4 | TiN |
| N39141 | SC406-0.438-P1-S.3-Z4 | 7/16 | 3/8 | 7/16 | 2-1/8 | 4 | |
| N39140 | SC406-0.438-P1-S.3-Z4 | 7/16 | 3/8 | 7/16 | 2-1/8 | 4 | TiN |
| N40141 | SC406-0.438-P2-S.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | |
| N40140 | SC406-0.438-P2-S.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N41141 | SC406-0.438-P3-S.3-Z4 | 7/16 | 3/8 | 1-3/8 | 3-1/16 | 4 | |
| N41140 | SC406-0.438-P3-S.3-Z4 | 7/16 | 3/8 | 1-3/8 | 3-1/16 | 4 | TiN |
| N42141 | SC406-0.438-P4-S.3-Z4 | 7/16 | 3/8 | 2 | 3-11/16 | 4 | |
| N42140 | SC406-0.438-P4-S.3-Z4 | 7/16 | 3/8 | 2 | 3-11/16 | 4 | TiN |
| N43141 | SC406-0.438-P5-S.3-Z4 | 7/16 | 3/8 | 2-1/4 | 3-15/16 | 4 | |
| N43140 | SC406-0.438-P5-S.3-Z4 | 7/16 | 3/8 | 2-1/4 | 3-15/16 | 4 | TiN |
| N44141 | SC406-0.438-P6-S.3-Z4 | 7/16 | 3/8 | 2-5/8 | 4-5/16 | 4 | |
| N44140 | SC406-0.438-P6-S.3-Z4 | 7/16 | 3/8 | 2-5/8 | 4-5/16 | 4 | TiN |
| N40151 | SC406-0.469-P2-S.3-Z4 | 15/32 | 3/8 | 1 | 2-11/16 | 4 | |
| N40150 | SC406-0.469-P2-S.3-Z4 | 15/32 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N40161 | SC406-0.500-P2-S.3-Z4 | 1/2 | 3/8 | 1 | 2-11/16 | 4 | |
| N40167 | SC406-0.500-P2-S.3-Z4 | 1/2 | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N39162 | SC406-0.500-D1-S.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | |
| N39160 | SC406-0.500-D1-S.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | TiN |
| N40162 | SC406-0.500-D2-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N40160 | SC406-0.500-D2-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- SC406

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N41162 | SC406-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/2 | 3-1/2 | 4 | |
| N41160 | SC406-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/2 | 3-1/2 | 4 | TiN |
| N42162 | SC406-0.500-D4-S.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | |
| N42160 | SC406-0.500-D4-S.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiN |
| N43162 | SC406-0.500-D5-S.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | |
| N43160 | SC406-0.500-D5-S.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiN |
| N44162 | SC406-0.500-D6-S.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | |
| N44160 | SC406-0.500-D6-S.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | TiN |
| N39172 | SC406-0.531-P1-S.3-Z4 | 17/32 | 1/2 | 5/8 | 2-5/8 | 4 | |
| N39170 | SC406-0.531-P1-S.3-Z4 | 17/32 | 1/2 | 5/8 | 2-5/8 | 4 | TiN |
| N40172 | SC406-0.531-P3-S.3-Z4 | 17/32 | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N40170 | SC406-0.531-P3-S.3-Z4 | 17/32 | 1/2 | 1-3/8 | 3-3/8 | 4 | TiN |
| N42172 | SC406-0.531-P5-S.3-Z4 | 17/32 | 1/2 | 2-1/2 | 4-1/2 | 4 | |
| N42170 | SC406-0.531-P5-S.3-Z4 | 17/32 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiN |
| N43172 | SC406-0.531-P6-S.3-Z4 | 17/32 | 1/2 | 3-1/8 | 5-1/8 | 4 | |
| N43170 | SC406-0.531-P6-S.3-Z4 | 17/32 | 1/2 | 3-1/8 | 5-1/8 | 4 | TiN |
| N39182 | SC406-0.563-P1-S.3-Z4 | 9/16 | 1/2 | 5/8 | 2-5/8 | 4 | |
| N39180 | SC406-0.563-P1-S.3-Z4 | 9/16 | 1/2 | 5/8 | 2-5/8 | 4 | TiN |
| N40182 | SC406-0.563-P2-S.3-Z4 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N40180 | SC406-0.563-P2-S.3-Z4 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 4 | TiN |
| N41182 | SC406-0.563-P3-S.3-Z4 | 9/16 | 1/2 | 1-7/8 | 3-7/8 | 4 | |
| N41180 | SC406-0.563-P3-S.3-Z4 | 9/16 | 1/2 | 1-7/8 | 3-7/8 | 4 | TiN |
| N42182 | SC406-0.563-P4-S.3-Z4 | 9/16 | 1/2 | 2-1/2 | 4-1/2 | 4 | |
| N42180 | SC406-0.563-P4-S.3-Z4 | 9/16 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiN |
| N43182 | SC406-0.563-P6-S.3-Z4 | 9/16 | 1/2 | 3-1/8 | 5-1/8 | 4 | |
| N43180 | SC406-0.563-P6-S.3-Z4 | 9/16 | 1/2 | 3-1/8 | 5-1/8 | 4 | TiN |
| N44182 | SC406-0.563-P7-S.3-Z4 | 9/16 | 1/2 | 4 | 6 | 4 | |
| N44180 | SC406-0.563-P7-S.3-Z4 | 9/16 | 1/2 | 4 | 6 | 4 | TiN |
| N39203 | SC406-0.625-D1-S.3-Z4 | 5/8 | 5/8 | 5/8 | 2-3/4 | 4 | |
| N39200 | SC406-0.625-D1-S.3-Z4 | 5/8 | 5/8 | 5/8 | 2-3/4 | 4 | TiN |
| N40203 | SC406-0.625-D2-S.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N40200 | SC406-0.625-D2-S.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N41203 | SC406-0.625-D3-S.3-Z4 | 5/8 | 5/8 | 1-7/8 | 4 | 4 | |
| N41200 | SC406-0.625-D3-S.3-Z4 | 5/8 | 5/8 | 1-7/8 | 4 | 4 | TiN |
| N42203 | SC406-0.625-D4-S.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | |
| N42200 | SC406-0.625-D4-S.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | TiN |

# GENERAL PURPOSE- SC406

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N43203 | SC406-0.625-D5-S.3-Z4 | 5/8 | 5/8 | 3-1/8 | 5-1/4 | 4 | |
| N43200 | SC406-0.625-D5-S.3-Z4 | 5/8 | 5/8 | 3-1/8 | 5-1/4 | 4 | TiN |
| N44203 | SC406-0.625-D6-S.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | |
| N44200 | SC406-0.625-D6-S.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | TiN |
| N39223 | SC406-0.688-P1-S.3-Z4 | 11/16 | 5/8 | 3/4 | 2-7/8 | 4 | |
| N39220 | SC406-0.688-P1-S.3-Z4 | 11/16 | 5/8 | 3/4 | 2-7/8 | 4 | TiN |
| N40223 | SC406-0.688-P2-S.3-Z4 | 11/16 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N40220 | SC406-0.688-P2-S.3-Z4 | 11/16 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N41223 | SC406-0.688-P3-S.3-Z4 | 11/16 | 5/8 | 2-1/4 | 4-3/8 | 4 | |
| N41220 | SC406-0.688-P3-S.3-Z4 | 11/16 | 5/8 | 2-1/4 | 4-3/8 | 4 | TiN |
| N42223 | SC406-0.688-P4-S.3-Z4 | 11/16 | 5/8 | 3 | 5-1/8 | 4 | |
| N42220 | SC406-0.688-P4-S.3-Z4 | 11/16 | 5/8 | 3 | 5-1/8 | 4 | TiN |
| N43223 | SC406-0.688-P5-S.3-Z4 | 11/16 | 5/8 | 3-1/2 | 5-5/8 | 4 | |
| N43220 | SC406-0.688-P5-S.3-Z4 | 11/16 | 5/8 | 3-1/2 | 5-5/8 | 4 | TiN |
| N44223 | SC406-0.688-P6-S.3-Z4 | 11/16 | 5/8 | 4 | 6-1/8 | 4 | |
| N44220 | SC406-0.688-P6-S.3-Z4 | 11/16 | 5/8 | 4 | 6-1/8 | 4 | TiN |
| N40242 | SC406-0.750-P2-S.3-Z4 | 3/4 | 1/2 | 1-5/8 | 3-5/8 | 4 | |
| N40248 | SC406-0.750-P2-S.3-Z4 | 3/4 | 1/2 | 1-5/8 | 3-5/8 | 4 | TiN |
| N39244 | SC406-0.750-D1-S.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | |
| N39240 | SC406-0.750-D1-S.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | TiN |
| N40244 | SC406-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N40240 | SC406-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiN |
| N41244 | SC406-0.750-D3-S.3-Z4 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 4 | |
| N41240 | SC406-0.750-D3-S.3-Z4 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 4 | TiN |
| N42244 | SC406-0.750-D4-S.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | |
| N42240 | SC406-0.750-D4-S.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiN |
| N43244 | SC406-0.750-D5-S.3-Z4 | 3/4 | 3/4 | 3-1/2 | 5-3/4 | 4 | |
| N43240 | SC406-0.750-D5-S.3-Z4 | 3/4 | 3/4 | 3-1/2 | 5-3/4 | 4 | TiN |
| N44244 | SC406-0.750-D6-S.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | |
| N44240 | SC406-0.750-D6-S.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | TiN |
| N39264 | SC406-0.813-P1-S.3-Z4 | 13/16 | 3/4 | 7/8 | 3-1/8 | 4 | |
| N39260 | SC406-0.813-P1-S.3-Z4 | 13/16 | 3/4 | 7/8 | 3-1/8 | 4 | TiN |
| N40264 | SC406-0.813-P2-S.3-Z4 | 13/16 | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N40260 | SC406-0.813-P2-S.3-Z4 | 13/16 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiN |
| N41264 | SC406-0.813-P3-S.3-Z4 | 13/16 | 3/4 | 2-5/8 | 4-7/8 | 4 | |
| N41260 | SC406-0.813-P3-S.3-Z4 | 13/16 | 3/4 | 2-5/8 | 4-7/8 | 4 | TiN |

# GENERAL PURPOSE- SC406

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N42264 | SC406-0.813-P4-S.3-Z4 | 13/16 | 3/4 | 3-1/2 | 5-3/4 | 4 | |
| N42260 | SC406-0.813-P4-S.3-Z4 | 13/16 | 3/4 | 3-1/2 | 5-3/4 | 4 | TiN |
| N43264 | SC406-0.813-P5-S.3-Z4 | 13/16 | 3/4 | 4-3/8 | 6-5/8 | 4 | |
| N43260 | SC406-0.813-P5-S.3-Z4 | 13/16 | 3/4 | 4-3/8 | 6-5/8 | 4 | TiN |
| N44264 | SC406-0.813-P6-S.3-Z4 | 13/16 | 3/4 | 5 | 7-1/4 | 4 | |
| N44260 | SC406-0.813-P6-S.3-Z4 | 13/16 | 3/4 | 5 | 7-1/4 | 4 | TiN |
| N39285 | SC406-0.875-D1-S.3-Z4 | 7/8 | 7/8 | 7/8 | 3-1/8 | 4 | |
| N39280 | SC406-0.875-D1-S.3-Z4 | 7/8 | 7/8 | 7/8 | 3-1/8 | 4 | TiN |
| N40285 | SC406-0.875-D2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 4 | |
| N40280 | SC406-0.875-D2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 4 | TiN |
| N41285 | SC406-0.875-D3-S.3-Z4 | 7/8 | 7/8 | 2-5/8 | 4-7/8 | 4 | |
| N41280 | SC406-0.875-D3-S.3-Z4 | 7/8 | 7/8 | 2-5/8 | 4-7/8 | 4 | TiN |
| N42285 | SC406-0.875-D4-S.3-Z4 | 7/8 | 7/8 | 3-1/2 | 5-3/4 | 4 | |
| N42280 | SC406-0.875-D4-S.3-Z4 | 7/8 | 7/8 | 3-1/2 | 5-3/4 | 4 | TiN |
| N43285 | SC406-0.875-D5-S.3-Z4 | 7/8 | 7/8 | 4-3/8 | 6-5/8 | 4 | |
| N43280 | SC406-0.875-D5-S.3-Z4 | 7/8 | 7/8 | 4-3/8 | 6-5/8 | 4 | TiN |
| N44285 | SC406-0.875-D6-S.3-Z4 | 7/8 | 7/8 | 5 | 7-1/4 | 4 | |
| N44280 | SC406-0.875-D6-S.3-Z4 | 7/8 | 7/8 | 5 | 7-1/4 | 4 | TiN |
| N40305 | SC406-0.938-P2-S.3-Z4 | 15/16 | 7/8 | 1-7/8 | 4-1/8 | 4 | |
| N40300 | SC406-0.938-P2-S.3-Z4 | 15/16 | 7/8 | 1-7/8 | 4-1/8 | 4 | TiN |
| N41305 | SC406-0.938-P3-S.3-Z4 | 15/16 | 7/8 | 3 | 5-1/4 | 4 | |
| N41300 | SC406-0.938-P3-S.3-Z4 | 15/16 | 7/8 | 3 | 5-1/4 | 4 | TiN |
| N40324 | SC406-1.000-P2-S.3-Z4 | 1 | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N40321 | SC406-1.000-P2-S.3-Z4 | 1 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiN |
| N39326 | SC406-1.000-D1-S.3-Z4 | 1 | 1 | 1 | 3-1/2 | 4 | |
| N39320 | SC406-1.000-D1-S.3-Z4 | 1 | 1 | 1 | 3-1/2 | 4 | TiN |
| N40326 | SC406-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | |
| N40320 | SC406-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | TiN |
| N41326 | SC406-1.000-D3-S.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | |
| N41320 | SC406-1.000-D3-S.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | TiN |
| N42326 | SC406-1.000-D4-S.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | |
| N42320 | SC406-1.000-D4-S.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | TiN |
| N43326 | SC406-1.000-D5-S.3-Z4 | 1 | 1 | 5 | 7-1/2 | 4 | |
| N43320 | SC406-1.000-D5-S.3-Z4 | 1 | 1 | 5 | 7-1/2 | 4 | TiN |
| N44326 | SC406-1.000-D6-S.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | |
| N44320 | SC406-1.000-D6-S.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | TiN |

# GENERAL PURPOSE- SC406

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N40366 | SC406-1.125-P2-S.3-Z4 | 1-1/8 | 1 | 2 | 4-1/2 | 4 | |
| N40360 | SC406-1.125-P2-S.3-Z4 | 1-1/8 | 1 | 2 | 4-1/2 | 4 | TiN |
| N42366 | SC406-1.125-P4-S.3-Z6 | 1-1/8 | 1 | 4 | 6-1/2 | 6 | |
| N42360 | SC406-1.125-P4-S.3-Z6 | 1-1/8 | 1 | 4 | 6-1/2 | 6 | TiN |
| N40406 | SC406-1.250-P2-S.3-Z4 | 1-1/4 | 1 | 2 | 4-1/2 | 4 | |
| N40401 | SC406-1.250-P2-S.3-Z4 | 1-1/4 | 1 | 2 | 4-1/2 | 4 | TiN |
| N42406 | SC406-1.250-P3-S.3-Z6 | 1-1/4 | 1 | 4 | 6-1/2 | 6 | |
| N42401 | SC406-1.250-P3-S.3-Z6 | 1-1/4 | 1 | 4 | 6-1/2 | 6 | TiN |
| N40407 | SC406-1.250-D1-S.3-Z4 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 4 | |
| N40400 | SC406-1.250-D1-S.3-Z4 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 4 | TiN |
| N41407 | SC406-1.250-D2-S.3-Z4 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 4 | |
| N41400 | SC406-1.250-D2-S.3-Z4 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 4 | TiN |
| N42407 | SC406-1.250-D3-S.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N42400 | SC406-1.250-D3-S.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | TiN |
| N44407 | SC406-1.250-D5-S.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | |
| N44400 | SC406-1.250-D5-S.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | TiN |
| N42486 | SC406-1.500-P3-S.3-Z6 | 1-1/2 | 1 | 4 | 6-1/2 | 6 | |
| N42481 | SC406-1.500-P3-S.3-Z6 | 1-1/2 | 1 | 4 | 6-1/2 | 6 | TiN |
| N40487 | SC406-1.500-P1-S.3-Z4 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 4 | |
| N40480 | SC406-1.500-P1-S.3-Z4 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 4 | TiN |
| N42487 | SC406-1.500-P4-S.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N42480 | SC406-1.500-P4-S.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | TiN |
| N44487 | SC406-1.500-P5-S.3-Z6 | 1-1/2 | 1-1/4 | 8 | 10-1/2 | 6 | |
| N44480 | SC406-1.500-P5-S.3-Z6 | 1-1/2 | 1-1/4 | 8 | 10-1/2 | 6 | TiN |
| N40567 | SC406-1.750-P1-S.3-Z6 | 1-3/4 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N40560 | SC406-1.750-P1-S.3-Z6 | 1-3/4 | 1-1/4 | 2 | 4-1/2 | 6 | TiN |
| N40647 | SC406-2.000-P1-S.3-Z6 | 2 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N40640 | SC406-2.000-P1-S.3-Z6 | 2 | 1-1/4 | 2 | 4-1/2 | 6 | TiN |
| N41648 | SC406-2.000-P2-S.3-Z6 | 2 | 1-1/4 | 3 | 5-1/2 | 6 | |
| N41649 | SC406-2.000-P2-S.3-Z6 | 2 | 1-1/4 | 3 | 5-1/2 | 6 | TiN |
| N42647 | SC406-2.000-P2-S.3-Z8 | 2 | 1-1/4 | 4 | 6-1/2 | 8 | |
| N42640 | SC406-2.000-P2-S.3-Z8 | 2 | 1-1/4 | 4 | 6-1/2 | 8 | TiN |

# GENERAL PURPOSE- SB470

HSS
HIGH SPEED STEEL

HELIX
30°

BALL END

CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N47081 | SB470-0.250-F3-B.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N47080 | SB470-0.250-F3-B.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N47082 | SB470-0.250-F4-B.3-Z4 | 1/4 | 3/8 | 1 | 2-13/16 | 4 | |
| N47083 | SB470-0.250-F4-B.3-Z4 | 1/4 | 3/8 | 1 | 2-13/16 | 4 | TiN |
| N48081 | SB470-0.250-F5-B.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | |
| N48080 | SB470-0.250-F5-B.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | TiN |
| N49081 | SB470-0.250-F7-B.3-Z4 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 4 | |
| N49080 | SB470-0.250-F7-B.3-Z4 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 4 | TiN |
| N47101 | SB470-0.313-F2-B.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N47100 | SB470-0.313-F2-B.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N48101 | SB470-0.313-F4-B.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | |
| N48100 | SB470-0.313-F4-B.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | TiN |
| N49101 | SB470-0.313-F6-B.3-Z4 | 5/16 | 3/8 | 2 | 3-3/4 | 4 | |
| N49100 | SB470-0.313-F6-B.3-Z4 | 5/16 | 3/8 | 2 | 3-3/4 | 4 | TiN |
| N47121 | SB470-0.375-D2-B.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N47120 | SB470-0.375-D2-B.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N48121 | SB470-0.375-D4-B.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | |
| N48120 | SB470-0.375-D4-B.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiN |
| N49121 | SB470-0.375-D7-B.3-Z4 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 4 | |
| N49120 | SB470-0.375-D7-B.3-Z4 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 4 | TiN |
| N47163 | SB470-0.500-D2-B.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | |
| N47161 | SB470-0.500-D2-B.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiN |
| N47162 | SB470-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N47160 | SB470-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiN |
| N48162 | SB470-0.500-D4-B.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | |
| N48160 | SB470-0.500-D4-B.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiN |
| N48163 | SB470-0.500-D5-B.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | |
| N48168 | SB470-0.500-D5-B.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiN |
| N49162 | SB470-0.500-D6-B.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | |
| N49160 | SB470-0.500-D6-B.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | TiN |
| N47204 | SB470-0.625-D2-B.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-3/8 | 4 | |
| N47201 | SB470-0.625-D2-B.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-3/8 | 4 | TiN |
| N47203 | SB470-0.625-D3-B.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N47200 | SB470-0.625-D3-B.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N48203 | SB470-0.625-D4-B.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | |

# GENERAL PURPOSE- SB470

HSS
HIGH SPEED STEEL

HELIX
30°

BALL END

CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N48200 | SB470-0.625-D4-B.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | TiN |
| N48204 | SB470-0.625-D5-B.3-Z4 | 5/8 | 5/8 | 3 | 5-1/8 | 4 | |
| N48201 | SB470-0.625-D5-B.3-Z4 | 5/8 | 5/8 | 3 | 5-1/8 | 4 | TiN |
| N49203 | SB470-0.625-D6-B.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | |
| N49200 | SB470-0.625-D6-B.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | TiN |
| N47244 | SB470-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N47240 | SB470-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiN |
| N48245 | SB470-0.750-D3-B.3-Z4 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 4 | |
| N48241 | SB470-0.750-D3-B.3-Z4 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 4 | TiN |
| N48244 | SB470-0.750-D4-B.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | |
| N48240 | SB470-0.750-D4-B.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiN |
| N49244 | SB470-0.750-D5-B.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | |
| N49240 | SB470-0.750-D5-B.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | TiN |
| N49245 | SB470-0.750-D6-B.3-Z4 | 3/4 | 3/4 | 4-1/2 | 6-3/4 | 4 | |
| N49241 | SB470-0.750-D6-B.3-Z4 | 3/4 | 3/4 | 4-1/2 | 6-3/4 | 4 | TiN |
| N47285 | SB470-0.875-D2-B.3-Z4 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 4 | |
| N47280 | SB470-0.875-D2-B.3-Z4 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 4 | TiN |
| N47326 | SB470-1.000-D2-B.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | |
| N47320 | SB470-1.000-D2-B.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | TiN |
| N48327 | SB470-1.000-D3-B.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | |
| N48321 | SB470-1.000-D3-B.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | TiN |
| N48326 | SB470-1.000-D4-B.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | |
| N48320 | SB470-1.000-D4-B.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | TiN |
| N49326 | SB470-1.000-D6-B.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | |
| N49320 | SB470-1.000-D6-B.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | TiN |
| N47407 | SB470-1.250-D1-B.3-Z4 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 4 | |
| N47400 | SB470-1.250-D1-B.3-Z4 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 4 | TiN |
| N48407 | SB470-1.250-D3-B.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N48400 | SB470-1.250-D3-B.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | TiN |
| N49408 | SB470-1.250-D5-B.3-Z4 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 4 | |
| N49401 | SB470-1.250-D5-B.3-Z4 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 4 | TiN |
| N47487 | SB470-1.500-P1-B.3-Z4 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 4 | |
| N47480 | SB470-1.500-P1-B.3-Z4 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 4 | TiN |

# GENERAL PURPOSE- D400

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N45039 | D400-0.109-XF3-S.3-Z4 | 7/64 | 3/8 | 3/8 | 3-1/16 | 4 | |
| N45030 | D400-0.109-XF3-S.3-Z4 | 7/64 | 3/8 | 3/8 | 3-1/16 | 4 | TiN |
| N45041 | D400-0.125-XF3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 3-1/16 | 4 | |
| N45040 | D400-0.125-XF3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 3-1/16 | 4 | TiN |
| N45049 | D400-0.141-XF3-S.3-Z4 | 9/64 | 3/8 | 7/16 | 3-1/8 | 4 | |
| N45048 | D400-0.141-XF3-S.3-Z4 | 9/64 | 3/8 | 7/16 | 3-1/8 | 4 | TiN |
| N45051 | D400-0.156-XF3-S.3-Z4 | 5/32 | 3/8 | 7/16 | 3-1/8 | 4 | |
| N45050 | D400-0.156-XF3-S.3-Z4 | 5/32 | 3/8 | 7/16 | 3-1/8 | 4 | TiN |
| N45059 | D400-0.172-XF3-S.3-Z4 | 11/64 | 3/8 | 1/2 | 3-1/4 | 4 | |
| N45058 | D400-0.172-XF3-S.3-Z4 | 11/64 | 3/8 | 1/2 | 3-1/4 | 4 | TiN |
| N45061 | D400-0.188-XF3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 3-1/4 | 4 | |
| N45060 | D400-0.188-XF3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 3-1/4 | 4 | TiN |
| N45069 | D400-0.203-XF3-S.3-Z4 | 13/64 | 3/8 | 9/16 | 3-1/4 | 4 | |
| N45068 | D400-0.203-XF3-S.3-Z4 | 13/64 | 3/8 | 9/16 | 3-1/4 | 4 | TiN |
| N45071 | D400-0.219-XF3-S.3-Z4 | 7/32 | 3/8 | 9/16 | 3-1/4 | 4 | |
| N45070 | D400-0.219-XF3-S.3-Z4 | 7/32 | 3/8 | 9/16 | 3-1/4 | 4 | TiN |
| N45079 | D400-0.234-XF3-S.3-Z4 | 15/64 | 3/8 | 5/8 | 3-3/8 | 4 | |
| N45078 | D400-0.234-XF3-S.3-Z4 | 15/64 | 3/8 | 5/8 | 3-3/8 | 4 | TiN |
| N45081 | D400-0.250-XF3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 3-3/8 | 4 | |
| N45080 | D400-0.250-XF3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 3-3/8 | 4 | TiN |
| N45089 | D400-0.266-XF3-S.3-Z4 | 17/64 | 3/8 | 11/16 | 3-3/8 | 4 | |
| N45088 | D400-0.266-XF3-S.3-Z4 | 17/64 | 3/8 | 11/16 | 3-3/8 | 4 | TiN |
| N45091 | D400-0.281-XF2-S.3-Z4 | 9/32 | 3/8 | 11/16 | 3-3/8 | 4 | |
| N45090 | D400-0.281-XF2-S.3-Z4 | 9/32 | 3/8 | 11/16 | 3-3/8 | 4 | TiN |
| N45099 | D400-0.297-XF3-S.3-Z4 | 19/64 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N45098 | D400-0.297-XF3-S.3-Z4 | 19/64 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N45101 | D400-0.313-XF2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N45100 | D400-0.313-XF2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N45109 | D400-0.328-XF2-S.3-Z4 | 21/64 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N45108 | D400-0.328-XF2-S.3-Z4 | 21/64 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N45111 | D400-0.344-XF2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N45110 | D400-0.344-XF2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N45119 | D400-0.359-XF2-S.3-Z4 | 23/64 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N45118 | D400-0.359-XF2-S.3-Z4 | 23/64 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N45121 | D400-0.375-XD2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 3-1/2 | 4 | |

DISCOUNT CODE D40

# GENERAL PURPOSE- D400

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N45120 | D400-0.375-XD2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N45132 | D400-0.406-XF2-S.3-Z4 | 13/32 | 1/2 | 1 | 4-1/8 | 4 | |
| N45130 | D400-0.406-XF2-S.3-Z4 | 13/32 | 1/2 | 1 | 4-1/8 | 4 | TiN |
| N45142 | D400-0.438-XF2-S.3-Z4 | 7/16 | 1/2 | 1 | 4-1/8 | 4 | |
| N45140 | D400-0.438-XF2-S.3-Z4 | 7/16 | 1/2 | 1 | 4-1/8 | 4 | TiN |
| N45162 | D400-0.500-XD2-S.3-Z4 | 1/2 | 1/2 | 1 | 4-1/8 | 4 | |
| N45160 | D400-0.500-XD2-S.3-Z4 | 1/2 | 1/2 | 1 | 4-1/8 | 4 | TiN |
| N45173 | D400-0.531-XF3-S.3-Z4 | 17/32 | 5/8 | 1-3/8 | 5 | 4 | |
| N45170 | D400-0.531-XF3-S.3-Z4 | 17/32 | 5/8 | 1-3/8 | 5 | 4 | TiN |
| N45183 | D400-0.563-XF2-S.3-Z4 | 9/16 | 5/8 | 1-3/8 | 5 | 4 | |
| N45180 | D400-0.563-XF2-S.3-Z4 | 9/16 | 5/8 | 1-3/8 | 5 | 4 | TiN |
| N45203 | D400-0.625-XD2-S.3-Z4 | 5/8 | 5/8 | 1-3/8 | 5 | 4 | |
| N45200 | D400-0.625-XD2-S.3-Z4 | 5/8 | 5/8 | 1-3/8 | 5 | 4 | TiN |
| N45224 | D400-0.688-XF2-S.3-Z4 | 11/16 | 3/4 | 1-5/8 | 5-5/8 | 4 | |
| N45220 | D400-0.688-XF2-S.3-Z4 | 11/16 | 3/4 | 1-5/8 | 5-5/8 | 4 | TiN |
| N45244 | D400-0.750-XD2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 5-5/8 | 4 | |
| N45240 | D400-0.750-XD2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 5-5/8 | 4 | TiN |
| N45285 | D400-0.875-XD2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 6-1/8 | 4 | |
| N45280 | D400-0.875-XD2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 6-1/8 | 4 | TiN |
| N45326 | D400-1.000-XD2-S.3-Z4 | 1 | 1 | 1-7/8 | 6-3/8 | 4 | |
| N45320 | D400-1.000-XD2-S.3-Z4 | 1 | 1 | 1-7/8 | 6-3/8 | 4 | TiN |

# GENERAL PURPOSE- DC402

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N46041 | DC402-0.125-XF3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 3-1/16 | 4 | |
| N46040 | DC402-0.125-XF3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 3-1/16 | 4 | TiN |
| N46049 | DC402-0.141-XF3-S.3-Z4 | 9/64 | 3/8 | 7/16 | 3-1/8 | 4 | |
| N46048 | DC402-0.141-XF3-S.3-Z4 | 9/64 | 3/8 | 7/16 | 3-1/8 | 4 | TiN |
| N46051 | DC402-0.156-XF3-S.3-Z4 | 5/32 | 3/8 | 7/16 | 3-1/8 | 4 | |
| N46050 | DC402-0.156-XF3-S.3-Z4 | 5/32 | 3/8 | 7/16 | 3-1/8 | 4 | TiN |
| N46059 | DC402-0.172-XF3-S.3-Z4 | 11/64 | 3/8 | 1/2 | 3-1/4 | 4 | |
| N46058 | DC402-0.172-XF3-S.3-Z4 | 11/64 | 3/8 | 1/2 | 3-1/4 | 4 | TiN |
| N46061 | DC402-0.188-XF3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 3-1/4 | 4 | |
| N46060 | DC402-0.188-XF3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 3-1/4 | 4 | TiN |
| N46069 | DC402-0.203-XF3-S.3-Z4 | 13/64 | 3/8 | 9/16 | 3-1/4 | 4 | |
| N46068 | DC402-0.203-XF3-S.3-Z4 | 13/64 | 3/8 | 9/16 | 3-1/4 | 4 | TiN |
| N46071 | DC402-0.219-XF3-S.3-Z4 | 7/32 | 3/8 | 9/16 | 3-1/4 | 4 | |
| N46070 | DC402-0.219-XF3-S.3-Z4 | 7/32 | 3/8 | 9/16 | 3-1/4 | 4 | TiN |
| N46079 | DC402-0.234-XF3-S.3-Z4 | 15/64 | 3/8 | 5/8 | 3-3/8 | 4 | |
| N46078 | DC402-0.234-XF3-S.3-Z4 | 15/64 | 3/8 | 5/8 | 3-3/8 | 4 | TiN |
| N46081 | DC402-0.250-XF3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 3-3/8 | 4 | |
| N46080 | DC402-0.250-XF3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 3-3/8 | 4 | TiN |
| N46089 | DC402-0.266-XF3-S.3-Z4 | 17/64 | 3/8 | 11/64 | 3-3/8 | 4 | |
| N46088 | DC402-0.266-XF3-S.3-Z4 | 17/64 | 3/8 | 11/64 | 3-3/8 | 4 | TiN |
| N46091 | DC402-0.281-XF2-S.3-Z4 | 9/32 | 3/8 | 11/16 | 3-3/8 | 4 | |
| N46090 | DC402-0.281-XF2-S.3-Z4 | 9/32 | 3/8 | 11/16 | 3-3/8 | 4 | TiN |
| N46099 | DC402-0.297-XF3-S.3-Z4 | 19/64 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N46098 | DC402-0.297-XF3-S.3-Z4 | 19/64 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N46101 | DC402-0.313-XF2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N46100 | DC402-0.313-XF2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N46109 | DC402-0.328-XF2-S.3-Z4 | 21/64 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N46108 | DC402-0.328-XF2-S.3-Z4 | 21/64 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N46111 | DC402-0.344-XF2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N46110 | DC402-0.344-XF2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N46119 | DC402-0.359-XF2-S.3-Z4 | 23/64 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N46118 | DC402-0.359-XF2-S.3-Z4 | 23/64 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N46121 | DC402-0.375-XD2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N46120 | DC402-0.375-XD2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 3-1/2 | 4 | TiN |
| N46129 | DC402-0.359-XF3-S.3-Z4 | 25/64 | 1/2 | 1 | 4-1/8 | 4 | |

# GENERAL PURPOSE- DC402

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all common materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N46128 | DC402-0.359-XF3-S.3-Z4 | 25/64 | 1/2 | 1 | 4-1/8 | 4 | TiN |
| N46132 | DC402-0.406-XF2-S.3-Z4 | 13/32 | 1/2 | 1 | 4-3/16 | 4 | |
| N46130 | DC402-0.406-XF2-S.3-Z4 | 13/32 | 1/2 | 1 | 4-3/16 | 4 | TiN |
| N46142 | DC402-0.438-XF2-S.3-Z4 | 7/16 | 1/2 | 1 | 4-1/8 | 4 | |
| N46140 | DC402-0.438-XF2-S.3-Z4 | 7/16 | 1/2 | 1 | 4-1/8 | 4 | TiN |
| N46162 | DC402-0.500-XD2-S.3-Z4 | 1/2 | 1/2 | 1 | 4-1/8 | 4 | |
| N46160 | DC402-0.500-XD2-S.3-Z4 | 1/2 | 1/2 | 1 | 4-1/8 | 4 | TiN |
| N46173 | DC402-0.531-XF3-S.3-Z4 | 17/32 | 5/8 | 1-3/8 | 5 | 4 | |
| N46170 | DC402-0.531-XF3-S.3-Z4 | 17/32 | 5/8 | 1-3/8 | 5 | 4 | TiN |
| N46183 | DC402-0.563-XF2-S.3-Z4 | 9/16 | 5/8 | 1-3/8 | 5 | 4 | |
| N46180 | DC402-0.563-XF2-S.3-Z4 | 9/16 | 5/8 | 1-3/8 | 5 | 4 | TiN |
| N46203 | DC402-0.625-XD2-S.3-Z4 | 5/8 | 5/8 | 1-3/8 | 5 | 4 | |
| N46200 | DC402-0.625-XD2-S.3-Z4 | 5/8 | 5/8 | 1-3/8 | 5 | 4 | TiN |
| N46214 | DC402-0.656-XF2-S.3-Z4 | 21/32 | 3/4 | 1-5/8 | 5-5/8 | 4 | |
| N46210 | DC402-0.656-XF2-S.3-Z4 | 21/32 | 3/4 | 1-5/8 | 5-5/8 | 4 | TiN |
| N46224 | DC402-0.688-XF2-S.3-Z4 | 11/16 | 3/4 | 1-5/8 | 5-5/8 | 4 | |
| N46220 | DC402-0.688-XF2-S.3-Z4 | 11/16 | 3/4 | 1-5/8 | 5-5/8 | 4 | TiN |
| N46244 | DC402-0.750-XD2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 5-5/8 | 4 | |
| N46240 | DC402-0.750-XD2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 5-5/8 | 4 | TiN |
| N46265 | DC402-0.813-XF2-S.3-Z4 | 13/16 | 7/8 | 1-7/8 | 6-1/8 | 4 | |
| N46260 | DC402-0.813-XF2-S.3-Z4 | 13/16 | 7/8 | 1-7/8 | 6-1/8 | 4 | TiN |
| N46285 | DC402-0.875-XD2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 6-1/8 | 4 | |
| N46280 | DC402-0.875-XD2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 6-1/8 | 4 | TiN |
| N46326 | DC402-1.000-XD2-S.3-Z4 | 1 | 1 | 1-7/8 | 6-3/8 | 4 | |
| N46320 | DC402-1.000-XD2-S.3-Z4 | 1 | 1 | 1-7/8 | 6-3/8 | 4 | TiN |

# GENERAL PURPOSE- SLR600

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profile milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH |
|---|---|---|---|---|---|---|---|---|
| N60121 | SLR600-0.375-E3-S.3-Z4 | 3/8 | 3/8 | 1 | 5 | 4 | | 3-1/4 |
| N60120 | SLR600-0.375-E3-S.3-Z4 | 3/8 | 3/8 | 1 | 5 | 4 | TiN | 3-1/4 |
| N60162 | SLR600-0.500-E3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 6 | 4 | | 4 |
| N60160 | SLR600-0.500-E3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 6 | 4 | TiN | 4 |
| N60203 | SLR600-0.625-E2-S.3-Z4 | 5/8 | 5/8 | 1-1/2 | 7-1/8 | 4 | | 5 |
| N60200 | SLR600-0.625-E2-S.3-Z4 | 5/8 | 5/8 | 1-1/2 | 7-1/8 | 4 | TiN | 5 |
| N60244 | SLR600-0.750-E3-S.3-Z4 | 3/4 | 3/4 | 2 | 8-1/4 | 4 | | 6 |
| N60240 | SLR600-0.750-E3-S.3-Z4 | 3/4 | 3/4 | 2 | 8-1/4 | 4 | TiN | 6 |
| N60326 | SLR600-1.000-E3-S.3-Z4 | 1 | 1 | 2-1/2 | 10-1/2 | 4 | | 8 |
| N60320 | SLR600-1.000-E3-S.3-Z4 | 1 | 1 | 2-1/2 | 10-1/2 | 4 | TiN | 8 |
| N60407 | SLR600-1.250-E3-S.3-Z6 | 1-1/4 | 1-1/4 | 3-1/2 | 12-1/2 | 6 | | 10 |
| N60400 | SLR600-1.250-E3-S.3-Z6 | 1-1/4 | 1-1/4 | 3-1/2 | 12-1/2 | 6 | TiN | 10 |

# GENERAL PURPOSE- SLRC602

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

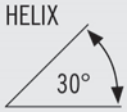
CENTER CUTTING

- Extra long reach
- Weldon flat standard
- Designed for profile milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH |
|---|---|---|---|---|---|---|---|---|
| N79121 | SLRC602-0.375-E3-S.3-Z4 | 3/8 | 3/8 | 1 | 5 | 4 | | 3-1/4 |
| N79120 | SLRC602-0.375-E3-S.3-Z4 | 3/8 | 3/8 | 1 | 5 | 4 | TiN | 3-1/4 |
| N79162 | SLRC602-0.500-E3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 6 | 4 | | 4 |
| N79160 | SLRC602-0.500-E3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 6 | 4 | TiN | 4 |
| N79203 | SLRC602-0.625-E2-S.3-Z4 | 5/8 | 5/8 | 1-1/2 | 7-1/8 | 4 | | 5 |
| N79200 | SLRC602-0.625-E2-S.3-Z4 | 5/8 | 5/8 | 1-1/2 | 7-1/8 | 4 | TiN | 5 |
| N79244 | SLRC602-0.750-E3-S.3-Z4 | 3/4 | 3/4 | 2 | 8-1/4 | 4 | | 6 |
| N79240 | SLRC602-0.750-E3-S.3-Z4 | 3/4 | 3/4 | 2 | 8-1/4 | 4 | TiN | 6 |
| N79326 | SLRC602-1.000-E3-S.3-Z4 | 1 | 1 | 2-1/2 | 10-1/2 | 4 | | 8 |
| N79320 | SLRC602-1.000-E3-S.3-Z4 | 1 | 1 | 2-1/2 | 10-1/2 | 4 | TiN | 8 |

# GENERAL PURPOSE- SLRB601

HSS
HIGH SPEED STEEL

HELIX



BALL END

CENTER CUTTING

- Weldon flat standard
- Designed for profiling and contour milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH |
|---|---|---|---|---|---|---|---|---|
| N80121 | SLRB601-0.375-E3-B.3-Z4 | 3/8 | 3/8 | 1 | 5 | 4 | | 3-1/4 |
| N80120 | SLRB601-0.375-E3-B.3-Z4 | 3/8 | 3/8 | 1 | 5 | 4 | TiN | 3-1/4 |
| N80162 | SLRB601-0.500-E3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 6 | 4 | | 4 |
| N80160 | SLRB601-0.500-E3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 6 | 4 | TiN | 4 |
| N80203 | SLRB601-0.625-E2-B.3-Z4 | 5/8 | 5/8 | 1-1/2 | 7-1/8 | 4 | | 5 |
| N80200 | SLRB601-0.625-E2-B.3-Z4 | 5/8 | 5/8 | 1-1/2 | 7-1/8 | 4 | TiN | 5 |
| N80244 | SLRB601-0.750-E3-B.3-Z4 | 3/4 | 3/4 | 2 | 8-1/4 | 4 | | 6 |
| N80240 | SLRB601-0.750-E3-B.3-Z4 | 3/4 | 3/4 | 2 | 8-1/4 | 4 | TiN | 6 |
| N80326 | SLRB601-1.000-E3-B.3-Z4 | 1 | 1 | 2-1/2 | 10-1/2 | 4 | | 8 |
| N80320 | SLRB601-1.000-E3-B.3-Z4 | 1 | 1 | 2-1/2 | 10-1/2 | 4 | TiN | 8 |

# GENERAL PURPOSE- SMM850

HSS
HIGH SPEED STEEL

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Metric flute / inch shank
- Weldon flat standard
- Designed for profile milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N85030 | SMM850-0.118-F3-S.3-Z4 | 3mm | 3/8 | 3/8 | 2-5/16 | 4 | |
| N85031 | SMM850-0.118-F3-S.3-Z4 | 3mm | 3/8 | 3/8 | 2-5/16 | 4 | TiN |
| N85040 | SMM850-0.157-F3-S.3-Z4 | 4mm | 3/8 | 1/2 | 2-3/8 | 4 | |
| N85041 | SMM850-0.157-F3-S.3-Z4 | 4mm | 3/8 | 1/2 | 2-3/8 | 4 | TiN |
| N85050 | SMM850-0.197-F3-S.3-Z4 | 5mm | 3/8 | 1/2 | 2-3/8 | 4 | |
| N85051 | SMM850-0.197-F3-S.3-Z4 | 5mm | 3/8 | 1/2 | 2-3/8 | 4 | TiN |
| N85060 | SMM850-0.236-F3-S.3-Z4 | 6mm | 3/8 | 5/8 | 2-7/16 | 4 | |
| N85061 | SMM850-0.236-F3-S.3-Z4 | 6mm | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N85065 | SMM850-0.256-F2-S.3-Z4 | 6.5mm | 3/8 | 5/8 | 2-7/16 | 4 | |
| N85066 | SMM850-0.256-F2-S.3-Z4 | 6.5mm | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N85070 | SMM850-0.276-F2-S.3-Z4 | 7mm | 3/8 | 5/8 | 2-7/16 | 4 | |
| N85071 | SMM850-0.276-F2-S.3-Z4 | 7mm | 3/8 | 5/8 | 2-7/16 | 4 | TiN |
| N85080 | SMM850-0.315-F2-S.3-Z4 | 8mm | 3/8 | 3/4 | 2-1/2 | 4 | |
| N85081 | SMM850-0.315-F2-S.3-Z4 | 8mm | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N85085 | SMM850-0.335-F2-S.3-Z4 | 8.5mm | 3/8 | 3/4 | 2-1/2 | 4 | |
| N85086 | SMM850-0.335-F2-S.3-Z4 | 8.5mm | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N85090 | SMM850-0.354-F2-S.3-Z4 | 9mm | 3/8 | 3/4 | 2-1/2 | 4 | |
| N85091 | SMM850-0.354-F2-S.3-Z4 | 9mm | 3/8 | 3/4 | 2-1/2 | 4 | TiN |
| N85100 | SMM850-0.394-P3-S.3-Z4 | 10mm | 3/8 | 1 | 2-11/16 | 4 | |
| N85101 | SMM850-0.394-P3-S.3-Z4 | 10mm | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N85120 | SMM850-0.472-P2-S.3-Z4 | 12mm | 3/8 | 1 | 2-11/16 | 4 | |
| N85121 | SMM850-0.472-P2-S.3-Z4 | 12mm | 3/8 | 1 | 2-11/16 | 4 | TiN |
| N85125 | SMM850-0.492-F3-S.3-Z4 | 12.5mm | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N85126 | SMM850-0.492-F3-S.3-Z4 | 12.5mm | 1/2 | 1-1/4 | 3-1/4 | 4 | TiN |
| N85135 | SMM850-0.531-P3-S.3-Z4 | 13.5mm | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N85136 | SMM850-0.531-P3-S.3-Z4 | 13.5mm | 1/2 | 1-3/8 | 3-3/8 | 4 | TiN |
| N85140 | SMM850-0.551-P2-S.3-Z4 | 14mm | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N85141 | SMM850-0.551-P2-S.3-Z4 | 14mm | 1/2 | 1-3/8 | 3-3/8 | 4 | TiN |
| N85150 | SMM850-0.591-P2-S.3-Z4 | 15mm | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N85151 | SMM850-0.591-P2-S.3-Z4 | 15mm | 1/2 | 1-3/8 | 3-3/8 | 4 | TiN |
| N85160 | SMM850-0.630-P3-S.3-Z4 | 16mm | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N85161 | SMM850-0.630-P3-S.3-Z4 | 16mm | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N85170 | SMM850-0.669-P2-S.3-Z4 | 17mm | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N85171 | SMM850-0.669-P2-S.3-Z4 | 17mm | 5/8 | 1-5/8 | 3-3/4 | 4 | TiN |
| N85180 | SMM850-0.709-F2-S.3-Z4 | 18mm | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N85181 | SMM850-0.709-F2-S.3-Z4 | 18mm | 3/4 | 1-5/8 | 3-7/8 | 4 | TiN |
| N85200 | SMM850-0.787-P2-S.3-Z4 | 20mm | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N85201 | SMM850-0.787-P2-S.3-Z4 | 20mm | 3/4 | 1-7/8 | 4-1/8 | 4 | TiN |
| N85250 | SMM850-0.984-F2-S.3-Z4 | 25mm | 1 | 2 | 4-1/2 | 4 | |
| N85251 | SMM850-0.984-F2-S.3-Z4 | 25mm | 1 | 2 | 4-1/2 | 4 | TiN |

DISCOUNT CODE D40

# GENERAL PURPOSE- SR208

HSS
HIGH SPEED STEEL

HELIX
35°

SQUARE END

CENTER CUTTING

- Designed for slotting and pocket milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N66012 | SR208-0.031-F3-S.0-Z2 | 1/32 | 3/16 | 3/32 | 1-1/2 | 2 | |
| N66014 | SR208-0.031-F3-S.0-Z2 | 1/32 | 3/16 | 3/32 | 1-1/2 | 2 | TiN |
| N66015 | SR208-0.047-F3-S.0-Z2 | 3/64 | 3/16 | 9/64 | 1-1/2 | 2 | |
| N66016 | SR208-0.047-F3-S.0-Z2 | 3/64 | 3/16 | 9/64 | 1-1/2 | 2 | TiN |
| N66022 | SR208-0.063-F3-S.0-Z2 | 1/16 | 3/16 | 3/16 | 1-1/2 | 2 | |
| N66024 | SR208-0.063-F3-S.0-Z2 | 1/16 | 3/16 | 3/16 | 1-1/2 | 2 | TiN |
| N66025 | SR208-0.078-F3-S.0-Z2 | 5/64 | 3/16 | 15/64 | 1-1/2 | 2 | |
| N66026 | SR208-0.078-F3-S.0-Z2 | 5/64 | 3/16 | 15/64 | 1-1/2 | 2 | TiN |
| N66032 | SR208-0.094-F3-S.0-Z2 | 3/32 | 3/16 | 9/32 | 1-1/2 | 2 | |
| N66034 | SR208-0.094-F3-S.0-Z2 | 3/32 | 3/16 | 9/32 | 1-1/2 | 2 | TiN |
| N66035 | SR208-0.109-F3-S.0-Z2 | 7/64 | 3/16 | 21/64 | 1-1/2 | 2 | |
| N66036 | SR208-0.109-F3-S.0-Z2 | 7/64 | 3/16 | 21/64 | 1-1/2 | 2 | TiN |
| N66042 | SR208-0.125-F3-S.0-Z2 | 1/8 | 3/16 | 3/8 | 1-1/2 | 2 | |
| N66044 | SR208-0.125-F3-S.0-Z2 | 1/8 | 3/16 | 3/8 | 1-1/2 | 2 | TiN |
| N66045 | SR208-0.141-F3-S.0-Z2 | 9/64 | 3/16 | 27/64 | 1-1/2 | 2 | |
| N66046 | SR208-0.141-F3-S.0-Z2 | 9/64 | 3/16 | 27/64 | 1-1/2 | 2 | TiN |
| N66052 | SR208-0.156-F3-S.0-Z2 | 5/32 | 3/16 | 7/16 | 1-1/2 | 2 | |
| N66054 | SR208-0.156-F3-S.0-Z2 | 5/32 | 3/16 | 7/16 | 1-1/2 | 2 | TiN |
| N66062 | SR208-0.188-D3-S.0-Z2 | 3/16 | 3/16 | 1/2 | 1-1/2 | 2 | |
| N66064 | SR208-0.188-D3-S.0-Z2 | 3/16 | 3/16 | 1/2 | 1-1/2 | 2 | TiN |

# GENERAL PURPOSE- DR209

HSS
HIGH SPEED STEEL

HELIX
35°

SQUARE END

CENTER CUTTING

- Designed for slotting and pocket milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N66010 | DR209-0.031-XF3-S.0-Z2 | 1/32 | 3/16 | 3/32 | 2 | 2 | |
| N66017 | DR209-0.031-XF3-S.0-Z2 | 1/32 | 3/16 | 3/32 | 2 | 2 | TiN |
| N66019 | DR209-0.047-XF3-S.0-Z2 | 3/64 | 3/16 | 9/64 | 2 | 2 | |
| N66018 | DR209-0.047-XF3-S.0-Z2 | 3/64 | 3/16 | 9/64 | 2 | 2 | TiN |
| N66020 | DR209-0.063-XF3-S.0-Z2 | 1/16 | 3/16 | 3/16 | 2-1/4 | 2 | |
| N66027 | DR209-0.063-XF3-S.0-Z2 | 1/16 | 3/16 | 3/16 | 2-1/4 | 2 | TiN |
| N66029 | DR209-0.078-XF3-S.0-Z2 | 5/64 | 3/16 | 15/64 | 2-1/4 | 2 | |
| N66028 | DR209-0.078-XF3-S.0-Z2 | 5/64 | 3/16 | 15/64 | 2-1/4 | 2 | TiN |
| N66030 | DR209-0.094-XF3-S.0-Z2 | 3/32 | 3/16 | 9/32 | 2-1/4 | 2 | |
| N66037 | DR209-0.094-XF3-S.0-Z2 | 3/32 | 3/16 | 9/32 | 2-1/4 | 2 | TiN |
| N66039 | DR209-0.109-XF3-S.0-Z2 | 7/64 | 3/16 | 21/64 | 2-1/4 | 2 | |
| N66038 | DR209-0.109-XF3-S.0-Z2 | 7/64 | 3/16 | 21/64 | 2-1/4 | 2 | TiN |
| N66040 | DR209-0.125-XF3-S.0-Z2 | 1/8 | 3/16 | 3/8 | 2-1/4 | 2 | |
| N66047 | DR209-0.125-XF3-S.0-Z2 | 1/8 | 3/16 | 3/8 | 2-1/4 | 2 | TiN |
| N66050 | DR209-0.156-XF3-S.0-Z2 | 5/32 | 3/16 | 7/16 | 2-1/4 | 2 | |
| N66057 | DR209-0.156-XF3-S.0-Z2 | 5/32 | 3/16 | 7/16 | 2-1/4 | 2 | TiN |
| N66059 | DR209-0.172-XF3-S.0-Z2 | 11/64 | 3/16 | 1/2 | 2-1/4 | 2 | |
| N66058 | DR209-0.172-XF3-S.0-Z2 | 11/64 | 3/16 | 1/2 | 2-1/4 | 2 | TiN |
| N66060 | DR209-0.188-XD3-S.0-Z2 | 3/16 | 3/16 | 1/2 | 2-1/4 | 2 | |
| N66068 | DR209-0.188-XD3-S.0-Z2 | 3/16 | 3/16 | 1/2 | 2-1/4 | 2 | TiN |

# GENERAL PURPOSE- DS211

HSS
HIGH SPEED STEEL

HELIX
35°

SQUARE END

CENTER CUTTING

- 3/16" shank
- Designed for slotting and pocket milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N64010 | DS211-0.031-XF2-S.0-Z2 | 1/32 | 3/16 | 3/64 | 1-7/8 | 2 | |
| N64017 | DS211-0.031-XF2-S.0-Z2 | 1/32 | 3/16 | 3/64 | 1-7/8 | 2 | TiN |
| N64019 | DS211-0.047-XF1-S.0-Z2 | 3/64 | 3/16 | 1/16 | 1-7/8 | 2 | |
| N64018 | DS211-0.047-XF1-S.0-Z2 | 3/64 | 3/16 | 1/16 | 1-7/8 | 2 | TiN |
| N64020 | DS211-0.063-XF2-S.0-Z2 | 1/16 | 3/16 | 3/32 | 2 | 2 | |
| N64027 | DS211-0.063-XF2-S.0-Z2 | 1/16 | 3/16 | 3/32 | 2 | 2 | TiN |
| N64029 | DS211-0.078-XF2-S.0-Z2 | 5/64 | 3/16 | 1/8 | 2 | 2 | |
| N64028 | DS211-0.078-XF2-S.0-Z2 | 5/64 | 3/16 | 1/8 | 2 | 2 | TiN |
| N64030 | DS211-0.094-XF2-S.0-Z2 | 3/32 | 3/16 | 9/64 | 2 | 2 | |
| N64037 | DS211-0.094-XF2-S.0-Z2 | 3/32 | 3/16 | 9/64 | 2 | 2 | TiN |
| N64040 | DS211-0.125-XF2-S.0-Z2 | 1/8 | 3/16 | 3/16 | 2 | 2 | |
| N64047 | DS211-0.125-XF2-S.0-Z2 | 1/8 | 3/16 | 3/16 | 2 | 2 | TiN |
| N64049 | DS211-0.141-XF2-S.0-Z2 | 9/64 | 3/16 | 7/32 | 2 | 2 | |
| N64048 | DS211-0.141-XF2-S.0-Z2 | 9/64 | 3/16 | 7/32 | 2 | 2 | TiN |
| N64050 | DS211-0.156-XF2-S.0-Z2 | 5/32 | 3/16 | 15/64 | 2 | 2 | |
| N64057 | DS211-0.156-XF2-S.0-Z2 | 5/32 | 3/16 | 15/64 | 2 | 2 | TiN |
| N64060 | DS211-0.188-XD2-S.0-Z2 | 3/16 | 3/16 | 9/32 | 2 | 2 | |
| N64068 | DS211-0.188-XD2-S.0-Z2 | 3/16 | 3/16 | 9/32 | 2 | 2 | TiN |

# GENERAL PURPOSE- DL213

HSS
HIGH SPEED STEEL

HELIX
35°

SQUARE END

CENTER CUTTING

- Designed for slotting and pocket milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N68020 | DL213-0.063-XF4-S.0-Z2 | 1/16 | 3/16 | 7/32 | 2-1/2 | 2 | |
| N68028 | DL213-0.063-XF4-S.0-Z2 | 1/16 | 3/16 | 7/32 | 2-1/2 | 2 | TiN |
| N68040 | DL213-0.125-XF6-S.0-Z2 | 1/8 | 3/16 | 3/4 | 3-1/8 | 2 | |
| N68048 | DL213-0.125-XF6-S.0-Z2 | 1/8 | 3/16 | 3/4 | 3-1/8 | 2 | TiN |
| N68050 | DL213-0.156-XF6-S.0-Z2 | 5/32 | 3/16 | 7/8 | 3-1/4 | 2 | |
| N68058 | DL213-0.156-XF6-S.0-Z2 | 5/32 | 3/16 | 7/8 | 3-1/4 | 2 | TiN |
| N68060 | DL213-0.188-XD5-S.0-Z2 | 3/16 | 3/16 | 1 | 3-1/8 | 2 | |
| N68068 | DL213-0.188-XD5-S.0-Z2 | 3/16 | 3/16 | 1 | 3-1/8 | 2 | TiN |

# GENERAL PURPOSE- DB215

HSS
HIGH SPEED STEEL

HELIX
35°

BALL END

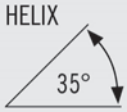
CENTER CUTTING

- Designed for slotting, pocketing and contour milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N67010 | DB215-0.063-XF3-B.0-Z2 | 1/16 | 3/16 | 3/16 | 2-1/4 | 2 | |
| N67018 | DB215-0.063-XF3-B.0-Z2 | 1/16 | 3/16 | 3/16 | 2-1/4 | 2 | TiN |
| N67030 | DB215-0.094-XF3-B.0-Z2 | 3/32 | 3/16 | 9/32 | 2-1/4 | 2 | |
| N67038 | DB215-0.094-XF3-B.0-Z2 | 3/32 | 3/16 | 9/32 | 2-1/4 | 2 | TiN |
| N67040 | DB215-0.125-XF3-B.0-Z2 | 1/8 | 3/16 | 3/8 | 2-1/4 | 2 | |
| N67048 | DB215-0.125-XF3-B.0-Z2 | 1/8 | 3/16 | 3/8 | 2-1/4 | 2 | TiN |

# GENERAL PURPOSE- DBS217

HSS
HIGH SPEED STEEL

HELIX



BALL END

CENTER CUTTING

- Designed for slotting, pocketing and contour milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N65020 | DBS217-0.063-XF2-B.0-Z2 | 1/16 | 3/16 | 3/32 | 2 | 2 | |
| N65028 | DBS217-0.063-XF2-B.0-Z2 | 1/16 | 3/16 | 3/32 | 2 | 2 | TiN |
| N65030 | DBS217-0.094-XF2-B.0-Z2 | 3/32 | 3/16 | 9/64 | 2 | 2 | |
| N65038 | DBS217-0.094-XF2-B.0-Z2 | 3/32 | 3/16 | 9/64 | 2 | 2 | TiN |

# GENERAL PURPOSE- SR414

HSS
HIGH SPEED STEEL

HELIX
35°

SQUARE END

NON CENTER CUTTING

- Designed for profile milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N76022 | SR414-0.063-F3-S.0-Z4 | 1/16 | 3/16 | 3/16 | 1-1/2 | 4 | |
| N76024 | SR414-0.063-F3-S.0-Z4 | 1/16 | 3/16 | 3/16 | 1-1/2 | 4 | TiN |
| N76025 | SR414-0.078-F3-S.0-Z4 | 5/64 | 3/16 | 1/4 | 1-1/2 | 4 | |
| N76026 | SR414-0.078-F3-S.0-Z4 | 5/64 | 3/16 | 1/4 | 1-1/2 | 4 | TiN |
| N76032 | SR414-0.094-F3-S.0-Z4 | 3/32 | 3/16 | 9/32 | 1-1/2 | 4 | |
| N76034 | SR414-0.094-F3-S.0-Z4 | 3/32 | 3/16 | 9/32 | 1-1/2 | 4 | TiN |
| N76042 | SR414-0.125-F3-S.0-Z4 | 1/8 | 3/16 | 3/8 | 1-1/2 | 4 | |
| N76044 | SR414-0.125-F3-S.0-Z4 | 1/8 | 3/16 | 3/8 | 1-1/2 | 4 | TiN |
| N76052 | SR414-0.156-F3-S.0-Z4 | 5/32 | 3/16 | 7/16 | 1-1/2 | 4 | |
| N76054 | SR414-0.156-F3-S.0-Z4 | 5/32 | 3/16 | 7/16 | 1-1/2 | 4 | TiN |

# GENERAL PURPOSE- DR416

HSS
HIGH SPEED STEEL

HELIX
35°

SQUARE END

NON CENTER CUTTING

- Designed for profile milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N76020 | DR416-0.063-XF3-S.0-Z4 | 1/16 | 3/16 | 3/16 | 2-1/4 | 4 | |
| N76028 | DR416-0.063-XF3-S.0-Z4 | 1/16 | 3/16 | 3/16 | 2-1/4 | 4 | TiN |
| N76030 | DR416-0.094-XF3-S.0-Z4 | 3/32 | 3/16 | 9/32 | 2-1/4 | 4 | |
| N76038 | DR416-0.094-XF3-S.0-Z4 | 3/32 | 3/16 | 9/32 | 2-1/4 | 4 | TiN |
| N76040 | DR416-0.125-XF3-S.0-Z4 | 1/8 | 3/16 | 3/8 | 2-1/4 | 4 | |
| N76048 | DR416-0.125-XF3-S.0-Z4 | 1/8 | 3/16 | 3/8 | 2-1/4 | 4 | TiN |

# GENERAL PURPOSE- DS420

HSS
HIGH SPEED STEEL

HELIX
35°

SQUARE END

NON CENTER CUTTING

- Designed for profile milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N74020 | DS420-0.063-XF2-S.0-Z4 | 1/16 | 3/16 | 3/32 | 2 | 4 | |
| N74028 | DS420-0.063-XF2-S.0-Z4 | 1/16 | 3/16 | 3/32 | 2 | 4 | TiN |
| N74030 | DS420-0.094-XF2-S.0-Z4 | 3/32 | 3/16 | 9/64 | 2 | 4 | |
| N74038 | DS420-0.094-XF2-S.0-Z4 | 3/32 | 3/16 | 9/64 | 2 | 4 | TiN |
| N74040 | DS420-0.125-XF2-S.0-Z4 | 1/8 | 3/16 | 3/16 | 2 | 4 | |
| N74048 | DS420-0.125-XF2-S.0-Z4 | 1/8 | 3/16 | 3/16 | 2 | 4 | TiN |

# GENERAL PURPOSE- DL418

HSS
HIGH SPEED STEEL

HELIX
35°

SQUARE END

NON CENTER CUTTING

- Designed for profile milling applications in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N78020 | DL418-0.063-XF4-S.0-Z4 | 1/16 | 3/16 | 7/32 | 2-1/2 | 4 | |
| N78028 | DL418-0.063-XF4-S.0-Z4 | 1/16 | 3/16 | 7/32 | 2-1/2 | 4 | TiN |
| N78030 | DL418-0.094-XF3-S.0-Z4 | 3/32 | 3/16 | 9/32 | 2-5/8 | 4 | |
| N78038 | DL418-0.094-XF3-S.0-Z4 | 3/32 | 3/16 | 9/32 | 2-5/8 | 4 | TiN |
| N78040 | DL418-0.125-XF6-S.0-Z4 | 1/8 | 3/16 | 3/4 | 3-1/8 | 4 | |
| N78048 | DL418-0.125-XF6-S.0-Z4 | 1/8 | 3/16 | 3/4 | 3-1/8 | 4 | TiN |
| N78050 | DL418-0.156-XF6-S.0-Z4 | 5/32 | 3/16 | 7/8 | 3-1/4 | 4 | |
| N78058 | DL418-0.156-XF6-S.0-Z4 | 5/32 | 3/16 | 7/8 | 3-1/4 | 4 | TiN |
| N78060 | DL418-0.188-XD5-S.0-Z4 | 3/16 | 3/16 | 1 | 3-3/8 | 4 | |
| N78068 | DL418-0.188-XD5-S.0-Z4 | 3/16 | 3/16 | 1 | 3-3/8 | 4 | TiN |

Niagara Cutter

**S203 / SK204 / SB207 / D201 / DB260**

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 2$ | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1 /2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.00 | 1.00 | 110 | n (rev/min) | 1681 | 1121 | 840 | 672 | 560 | 420 | 336 | 280 | 240 | 210 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 80 - 140 | $v_f$ (in/min) | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| | E 3 - 4 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| M | E 8 - 9 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| K | E 12 - 13 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 40 - 60 | $v_f$ (in/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| N | E 18 | 1.00 | 1.00 | 240 | n (rev/min) | 3667 | 2445 | 1834 | 1467 | 1222 | 917 | 733 | 611 | 524 | 458 |
| | | | | | $f_z$ (in) | 0.0013 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0088 | 0.0100 |
| | | | | 200 - 280 | $v_f$ (in/min) | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.50 | 0.25 | 160 | n (rev/min) | 2445 | 1630 | 1222 | 978 | 815 | 611 | 489 | 407 | 349 | 306 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 120 - 200 | $v_f$ (in/min) | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| | E 3 - 4 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| M | E 8 - 9 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| K | E 12 - 13 | 1.50 | 0.25 | 95 | n (rev/min) | 1452 | 968 | 726 | 581 | 484 | 363 | 290 | 242 | 207 | 181 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 75 - 115 | $v_f$ (in/min) | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 | 0.0125 |
| | | | | 300 - 400 | $v_f$ (in/min) | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**SEL250 / SEB270**

| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n$ = 2 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SLOTTING** | | | | | | | | | | | | | | | |
| P | E 1 - 2 | 1.00 | 1.00 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0063 | 0.0072 |
| | | | | 50 - 110 | $v_f$ (in/min) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| | E 3 - 4 | 1.00 | 1.00 | 35 | n (rev/min) | 535 | 357 | 267 | 214 | 178 | 134 | 107 | 89 | 76 | 67 |
| | | | | | $f_z$ (in) | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0049 | 0.0056 |
| | | | | 25 - 45 | $v_f$ (in/min) | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.7 | 0.7 | 0.7 | 0.8 |
| M | E 8 - 9 | 1.00 | 1.00 | 35 | n (rev/min) | 535 | 357 | 267 | 214 | 178 | 134 | 107 | 89 | 76 | 67 |
| | | | | | $f_z$ (in) | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0049 | 0.0056 |
| | | | | 25 - 45 | $v_f$ (in/min) | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.7 | 0.7 | 0.7 | 0.8 |
| K | E 12 - 13 | 1.00 | 1.00 | 35 | n (rev/min) | 535 | 357 | 267 | 214 | 178 | 134 | 107 | 89 | 76 | 67 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0063 | 0.0072 |
| | | | | 25 - 45 | $v_f$ (in/min) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N | E 18 | 1.00 | 1.00 | 240 | n (rev/min) | 3667 | 2445 | 1834 | 1467 | 1222 | 917 | 733 | 611 | 524 | 458 |
| | | | | | $f_z$ (in) | 0.0013 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0088 | 0.0100 |
| | | | | 200 - 280 | $v_f$ (in/min) | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 |
| **SIDE MILLING - ROUGHING** | | | | | | | | | | | | | | | |
| P | E 1 - 2 | 1.50 | 0.25 | 112 | n (rev/min) | 1711 | 1141 | 856 | 685 | 570 | 428 | 342 | 285 | 244 | 214 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 72 - 152 | $v_f$ (in/min) | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.8 | 3.8 | 3.8 | 3.9 |
| | E 3 - 4 | 1.50 | 0.25 | 56 | n (rev/min) | 856 | 570 | 428 | 342 | 285 | 214 | 171 | 143 | 122 | 107 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 36 - 76 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| M | E 8 - 9 | 1.50 | 0.25 | 56 | n (rev/min) | 856 | 570 | 428 | 342 | 285 | 214 | 171 | 143 | 122 | 107 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 36 - 76 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| K | E 12 - 13 | 1.50 | 0.25 | 67 | n (rev/min) | 1024 | 683 | 512 | 410 | 341 | 256 | 205 | 171 | 146 | 128 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 47 - 87 | $v_f$ (in/min) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 | 0.0125 |
| | | | | 300 - 400 | $v_f$ (in/min) | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

SMM830

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n$ = 2 | | | | | | | | | | |
| | | | | | | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 |
| P | E / M / A 1 - 2 | 1.00 | 1.00 | 30 | n (rev/min) | 2390 | 1590 | 1190 | 950 | 800 | 680 | 600 | 530 | 480 | 380 |
| | | | | | $f_z$ (mm) | 0.02 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 |
| | | | | 20 - 40 | $v_f$ (mm/min) | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| | E / M / A 3 - 4 | 1.00 | 1.00 | 15 | n (rev/min) | 1190 | 800 | 600 | 480 | 400 | 340 | 300 | 270 | 240 | 190 |
| | | | | | $f_z$ (mm) | 0.01 | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.06 | 0.06 | 0.07 | 0.09 |
| | | | | 12 - 18 | $v_f$ (mm/min) | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| M | E 8 - 9 | 1.00 | 1.00 | 15 | n (rev/min) | 1190 | 800 | 600 | 480 | 400 | 340 | 300 | 270 | 240 | 190 |
| | | | | | $f_z$ (mm) | 0.01 | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.06 | 0.06 | 0.07 | 0.09 |
| | | | | 12 - 18 | $v_f$ (mm/min) | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| K | E / M / A 12 - 13 | 1.00 | 1.00 | 15 | n (rev/min) | 1190 | 800 | 600 | 480 | 400 | 340 | 300 | 270 | 240 | 190 |
| | | | | | $f_z$ (mm) | 0.018 | 0.027 | 0.036 | 0.045 | 0.054 | 0.063 | 0.072 | 0.081 | 0.09 | 0.1125 |
| | | | | 12 - 18 | $v_f$ (mm/min) | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| N | E 18 | 1.00 | 1.00 | 70 | n (rev/min) | 5570 | 3710 | 2790 | 2230 | 1860 | 1590 | 1390 | 1240 | 1110 | 890 |
| | | | | | $f_z$ (mm) | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.13 |
| | | | | 60 - 90 | $v_f$ (mm/min) | 225 | 225 | 225 | 225 | 225 | 225 | 220 | 225 | 220 | 225 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E / M / A 1 - 2 | 1.50 | 0.25 | 50 | n (rev/min) | 3980 | 2650 | 1990 | 1590 | 1330 | 1140 | 990 | 880 | 800 | 640 |
| | | | | | $f_z$ (mm) | 0.02 | 0.03 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.11 | 0.14 |
| | | | | 40 - 60 | $v_f$ (mm/min) | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| | E / M / A 3 - 4 | 1.50 | 0.25 | 24 | n (rev/min) | 1910 | 1270 | 950 | 760 | 640 | 550 | 480 | 420 | 380 | 310 |
| | | | | | $f_z$ (mm) | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 |
| | | | | 18 - 30 | $v_f$ (mm/min) | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 70 |
| M | E 8 - 9 | 1.50 | 0.25 | 24 | n (rev/min) | 1910 | 1270 | 950 | 760 | 640 | 550 | 480 | 420 | 380 | 310 |
| | | | | | $f_z$ (mm) | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 |
| | | | | 18 - 30 | $v_f$ (mm/min) | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 70 |
| K | E / M / A 12 - 13 | 1.50 | 0.25 | 30 | n (rev/min) | 2390 | 1590 | 1190 | 950 | 800 | 680 | 600 | 530 | 480 | 380 |
| | | | | | $f_z$ (mm) | 0.02 | 0.03 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.11 | 0.14 |
| | | | | 20 - 40 | $v_f$ (mm/min) | 110 | 105 | 105 | 105 | 110 | 105 | 110 | 105 | 110 | 105 |
| N | E 18 | 1.50 | 0.25 | 110 | n (rev/min) | 8750 | 5840 | 4380 | 3500 | 2920 | 2500 | 2190 | 1950 | 1750 | 1400 |
| | | | | | $f_z$ (mm) | 0.03 | 0.04 | 0.05 | 0.06 | 0.08 | 0.09 | 0.10 | 0.11 | 0.13 | 0.16 |
| | | | | 90 - 120 | $v_f$ (mm/min) | 440 | 440 | 440 | 440 | 440 | 440 | 440 | 440 | 440 | 440 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**STF320 / DTF310**

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n$ = 3 | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.00 | 1.00 | 110 | n (rev/min) | 1681 | 1121 | 840 | 672 | 560 | 420 | 336 | 280 | 240 | 210 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 80 - 140 | $v_f$ (in/min) | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| | E 3 - 4 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| M | E 8 - 9 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| K | E 12 - 13 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 40 - 60 | $v_f$ (in/min) | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| N | E 18 | 1.00 | 1.00 | 240 | n (rev/min) | 3667 | 2445 | 1834 | 1467 | 1222 | 917 | 733 | 611 | 524 | 458 |
| | | | | | $f_z$ (in) | 0.0013 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0088 | 0.0100 |
| | | | | 200 - 280 | $v_f$ (in/min) | 13.8 | 13.8 | 13.8 | 13.8 | 13.7 | 13.8 | 13.7 | 13.7 | 13.8 | 13.7 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.50 | 0.25 | 160 | n (rev/min) | 2445 | 1630 | 1222 | 978 | 815 | 611 | 489 | 407 | 349 | 306 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 120 - 200 | $v_f$ (in/min) | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 |
| | E 3 - 4 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| M | E 8 - 9 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| K | E 12 - 13 | 1.50 | 0.25 | 95 | n (rev/min) | 1452 | 968 | 726 | 581 | 484 | 363 | 290 | 242 | 207 | 181 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 75 - 115 | $v_f$ (in/min) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 | 0.0125 |
| | | | | 300 - 400 | $v_f$ (in/min) | 25.1 | 25.1 | 25.1 | 25.1 | 25.1 | 25.1 | 25.1 | 25.1 | 25.1 | 25.1 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**A208 / AB910 / DA206**

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n$ = 2 | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| N | E 16 | 1.00 | 1.00 | 500 | n (rev/min) | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 | 1528 | 1273 | 1091 | 955 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 | 0.0150 | 0.0175 | 0.0200 |
| | | | | 200 - 800 | $v_f$ (in/min) | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 |
| | E 17 | 1.00 | 1.00 | 500 | n (rev/min) | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 | 1528 | 1273 | 1091 | 955 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 | 0.0150 | 0.0175 | 0.0200 |
| | | | | 200 - 800 | $v_f$ (in/min) | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 | 38.2 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | E 16 | 1.50 | 0.25 | 750 | n (rev/min) | 11460 | 7640 | 5730 | 4584 | 3820 | 2865 | 2292 | 1910 | 1637 | 1433 |
| | | | | | $f_z$ (in) | 0.0031 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0125 | 0.0156 | 0.0188 | 0.0219 | 0.0250 |
| | | | | 450 - 1050 | $v_f$ (in/min) | 71.6 | 71.6 | 71.6 | 71.6 | 71.6 | 71.6 | 71.6 | 71.6 | 71.6 | 71.7 |
| | E 17 | 1.50 | 0.25 | 750 | n (rev/min) | 11460 | 7640 | 5730 | 4584 | 3820 | 2865 | 2292 | 1910 | 1637 | 1433 |
| | | | | | $f_z$ (in) | 0.0031 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0125 | 0.0156 | 0.0188 | 0.0219 | 0.0250 |
| | | | | 450 - 1050 | $v_f$ (in/min) | 71.6 | 71.6 | 71.6 | 71.6 | 71.6 | 71.6 | 71.6 | 71.6 | 71.6 | 71.7 |

**A337 / AB337 / ACB337**

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n$ = 3 | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| N | E 16 | 1.00 | 1.00 | 500 | n (rev/min) | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 | 1528 | 1273 | 1091 | 955 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 | 0.0150 | 0.0175 | 0.0200 |
| | | | | 200 - 800 | $v_f$ (in/min) | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 |
| | E 17 | 1.00 | 1.00 | 500 | n (rev/min) | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 | 1528 | 1273 | 1091 | 955 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 | 0.0150 | 0.0175 | 0.0200 |
| | | | | 200 - 800 | $v_f$ (in/min) | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | E 16 | 1.50 | 0.25 | 750 | n (rev/min) | 11460 | 7640 | 5730 | 4584 | 3820 | 2865 | 2292 | 1910 | 1637 | 1433 |
| | | | | | $f_z$ (in) | 0.0031 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0125 | 0.0156 | 0.0188 | 0.0219 | 0.0250 |
| | | | | 450 - 1050 | $v_f$ (in/min) | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.5 |
| | E 17 | 1.50 | 0.25 | 750 | n (rev/min) | 11460 | 7640 | 5730 | 4584 | 3820 | 2865 | 2292 | 1910 | 1637 | 1433 |
| | | | | | $f_z$ (in) | 0.0031 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0125 | 0.0156 | 0.0188 | 0.0219 | 0.0250 |
| | | | | 450 - 1050 | $v_f$ (in/min) | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.5 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

AL337

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n$ = 3 | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| N | E 16 | 1.00 | 1.00 | 400 | n (rev/min) | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 | 1222 | 1019 | 873 | 764 |
| | | | | | $f_z$ (in) | 0.0020 | 0.0030 | 0.0040 | 0.0050 | 0.0060 | 0.0080 | 0.0100 | 0.0120 | 0.0140 | 0.0160 |
| | | | | 100 - 700 | $v_f$ (in/min) | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 |
| | E 17 | 1.00 | 1.00 | 400 | n (rev/min) | 6112 | 4075 | 3056 | 2445 | 2037 | 1528 | 1222 | 1019 | 873 | 764 |
| | | | | | $f_z$ (in) | 0.0020 | 0.0030 | 0.0040 | 0.0050 | 0.0060 | 0.0080 | 0.0100 | 0.0120 | 0.0140 | 0.0160 |
| | | | | 100 - 700 | $v_f$ (in/min) | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | E 16 | 1.50 | 0.25 | 600 | n (rev/min) | 9168 | 6112 | 4584 | 3667 | 3056 | 2292 | 1834 | 1528 | 1310 | 1146 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 | 0.0150 | 0.0175 | 0.0200 |
| | | | | 300 - 900 | $v_f$ (in/min) | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 |
| | E 17 | 1.50 | 0.25 | 600 | n (rev/min) | 9168 | 6112 | 4584 | 3667 | 3056 | 2292 | 1834 | 1528 | 1310 | 1146 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 | 0.0150 | 0.0175 | 0.0200 |
| | | | | 300 - 900 | $v_f$ (in/min) | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**S404 / SC406 / SB470 / D400 / DC402**

| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n$ = 4 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SLOTTING** | | | | | | | | | | | | | | | |
| P | E 1 - 2 | 1.00 | 1.00 | 110 | n (rev/min) | 1681 | 1121 | 840 | 672 | 560 | 420 | 336 | 280 | 240 | 210 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 80 - 140 | $v_f$ (in/min) | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 |
| | E 3 - 4 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| M | E 8 - 9 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| K | E 12 - 13 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 40 - 60 | $v_f$ (in/min) | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.5 |
| N | E 18 | 1.00 | 1.00 | 240 | n (rev/min) | 3667 | 2445 | 1834 | 1467 | 1222 | 917 | 733 | 611 | 524 | 458 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 200 - 280 | $v_f$ (in/min) | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 |
| **SIDE MILING - ROUGHING** | | | | | | | | | | | | | | | |
| P | E 1 - 2 | 1.50 | 0.25 | 160 | n (rev/min) | 2445 | 1630 | 1222 | 978 | 815 | 611 | 489 | 407 | 349 | 306 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 120 - 200 | $v_f$ (in/min) | 13.8 | 13.8 | 13.7 | 13.8 | 13.8 | 13.7 | 13.8 | 13.7 | 13.7 | 13.8 |
| | E 3 - 4 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.4 | 5.3 | 5.4 | 5.4 | 5.4 |
| M | E 8 - 9 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.4 | 5.3 | 5.4 | 5.4 | 5.4 |
| K | E 12 - 13 | 1.50 | 0.25 | 95 | n (rev/min) | 1452 | 968 | 726 | 581 | 484 | 363 | 290 | 242 | 207 | 181 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 75 - 115 | $v_f$ (in/min) | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.1 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 300 - 400 | $v_f$ (in/min) | 30.1 | 30.1 | 30.1 | 30.1 | 30.1 | 30.1 | 30.1 | 30.1 | 30.1 | 30.1 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**S404 / SC406 / SB470 / D400 / DC402**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n$ = 6 | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.50 | 0.25 | 160 | n (rev/min) | 2445 | 1630 | 1222 | 978 | 815 | 611 | 489 | 407 | 349 | 306 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 120 - 200 | $v_f$ (in/min) | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.7 |
| | E 3 - 4 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| M | E 8 - 9 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| K | E 12 - 13 | 1.50 | 0.25 | 95 | n (rev/min) | 1452 | 968 | 726 | 581 | 484 | 363 | 290 | 242 | 207 | 181 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 75 - 115 | $v_f$ (in/min) | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.2 | 12.3 | 12.2 | 12.2 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 300 - 400 | $v_f$ (in/min) | 45.1 | 45.1 | 45.1 | 45.1 | 45.1 | 45.1 | 45.1 | 45.1 | 45.1 | 45.2 |

**SLR600 / SLRC602 / SLRB601**

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n$ = 4 | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.00 | 1.00 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0063 | 0.0072 |
| | | | | 50 - 110 | $v_f$ (in/min) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 |
| | E 3 - 4 | 1.00 | 1.00 | 35 | n (rev/min) | 535 | 357 | 267 | 214 | 178 | 134 | 107 | 89 | 76 | 67 |
| | | | | | $f_z$ (in) | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0049 | 0.0056 |
| | | | | 25 - 45 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| M | E 8 - 9 | 1.00 | 1.00 | 35 | n (rev/min) | 535 | 357 | 267 | 214 | 178 | 134 | 107 | 89 | 76 | 67 |
| | | | | | $f_z$ (in) | 0.0007 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0049 | 0.0056 |
| | | | | 25 - 45 | $v_f$ (in/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| K | E 12 - 13 | 1.00 | 1.00 | 35 | n (rev/min) | 535 | 357 | 267 | 214 | 178 | 134 | 107 | 89 | 76 | 67 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0018 | 0.0023 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0063 | 0.0072 |
| | | | | 25 - 45 | $v_f$ (in/min) | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| N | E 18 | 1.00 | 1.00 | 240 | n (rev/min) | 3667 | 2445 | 1834 | 1467 | 1222 | 917 | 733 | 611 | 524 | 458 |
| | | | | | $f_z$ (in) | 0.0013 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0088 | 0.0100 |
| | | | | 200 - 280 | $v_f$ (in/min) | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**SLR600 / SLRC602 / SLRB601**

**SIDE MILLING - ROUGHING**

| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n$ = 4 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.50 | 0.25 | 112 | n (rev/min) | 1711 | 1141 | 856 | 685 | 570 | 428 | 342 | 285 | 244 | 214 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 72 - 152 | $v_f$ (in/min) | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 |
| | E 3 - 4 | 1.50 | 0.25 | 56 | n (rev/min) | 856 | 570 | 428 | 342 | 285 | 214 | 171 | 143 | 122 | 107 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 36 - 76 | $v_f$ (in/min) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| M | E 8 - 9 | 1.50 | 0.25 | 56 | n (rev/min) | 856 | 570 | 428 | 342 | 285 | 214 | 171 | 143 | 122 | 107 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 36 - 76 | $v_f$ (in/min) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| K | E 12 - 13 | 1.50 | 0.25 | 67 | n (rev/min) | 1024 | 683 | 512 | 410 | 341 | 256 | 205 | 171 | 146 | 128 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 47 - 87 | $v_f$ (in/min) | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 | 0.0125 |
| | | | | 300 - 400 | $v_f$ (in/min) | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.5 |

**SIDE MILLING - ROUGHING $Z_n$ = 6**

| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.50 | 0.25 | 112 | n (rev/min) | 1711 | 1141 | 856 | 685 | 570 | 428 | 342 | 285 | 244 | 214 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 72 - 152 | $v_f$ (in/min) | 11.5 | 11.6 | 11.6 | 11.6 | 11.5 | 11.6 | 11.5 | 11.5 | 11.5 | 11.6 |
| | E 3 - 4 | 1.50 | 0.25 | 56 | n (rev/min) | 856 | 570 | 428 | 342 | 285 | 214 | 171 | 143 | 122 | 107 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 36 - 76 | $v_f$ (in/min) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| M | E 8 - 9 | 1.50 | 0.25 | 56 | n (rev/min) | 856 | 570 | 428 | 342 | 285 | 214 | 171 | 143 | 122 | 107 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 36 - 76 | $v_f$ (in/min) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| K | E 12 - 13 | 1.50 | 0.25 | 67 | n (rev/min) | 1024 | 683 | 512 | 410 | 341 | 256 | 205 | 171 | 146 | 128 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 47 - 87 | $v_f$ (in/min) | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 | 0.0125 |
| | | | | 300 - 400 | $v_f$ (in/min) | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.2 | 50.1 | 50.1 | 50.2 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**SMM850**

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n$ = 4 | | | | | | | | | | |
| | | | | | | 6 | 10 | 12 | 16 | 18 | 25 | 32 | 38 | 45 | 50 |
| P | E 1 - 2 | 1.00 | 1.00 | 34 | n (rev/min) | 1800 | 1080 | 900 | 680 | 600 | 430 | 340 | 280 | 240 | 220 |
| | | | | | $f_z$ (mm) | 0.027 | 0.045 | 0.054 | 0.072 | 0.081 | 0.113 | 0.144 | 0.171 | 0.203 | 0.225 |
| | | | | 24 - 43 | $v_f$ (mm/min) | 194 | 194 | 194 | 196 | 194 | 194 | 196 | 192 | 194 | 198 |
| | E 3 - 4 | 1.00 | 1.00 | 15 | n (rev/min) | 800 | 480 | 400 | 300 | 270 | 190 | 150 | 130 | 110 | 100 |
| | | | | | $f_z$ (mm) | 0.021 | 0.035 | 0.042 | 0.056 | 0.063 | 0.088 | 0.112 | 0.133 | 0.158 | 0.175 |
| | | | | 12 - 18 | $v_f$ (mm/min) | 67 | 67 | 67 | 67 | 68 | 67 | 67 | 69 | 69 | 70 |
| M | E 8 - 9 | 1.00 | 1.00 | 15 | n (rev/min) | 800 | 480 | 400 | 300 | 270 | 190 | 150 | 130 | 110 | 100 |
| | | | | | $f_z$ (mm) | 0.021 | 0.035 | 0.042 | 0.056 | 0.063 | 0.088 | 0.112 | 0.133 | 0.158 | 0.175 |
| | | | | 12 - 18 | $v_f$ (mm/min) | 67 | 67 | 67 | 67 | 68 | 67 | 67 | 69 | 69 | 70 |
| K | E 12 - 13 | 1.00 | 1.00 | 15 | n (rev/min) | 800 | 480 | 400 | 300 | 270 | 190 | 150 | 130 | 110 | 100 |
| | | | | | $f_z$ (mm) | 0.027 | 0.045 | 0.054 | 0.072 | 0.081 | 0.113 | 0.144 | 0.171 | 0.203 | 0.225 |
| | | | | 12 - 18 | $v_f$ (mm/min) | 86 | 86 | 86 | 86 | 87 | 86 | 86 | 89 | 89 | 90 |
| N | E 18 | 1.00 | 1.00 | 73 | n (rev/min) | 3870 | 2320 | 1940 | 1450 | 1290 | 930 | 730 | 610 | 520 | 460 |
| | | | | | $f_z$ (mm) | 0.027 | 0.045 | 0.054 | 0.072 | 0.081 | 0.113 | 0.144 | 0.171 | 0.203 | 0.225 |
| | | | | 61 - 85 | $v_f$ (mm/min) | 418 | 418 | 419 | 418 | 418 | 419 | 420 | 417 | 421 | 414 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

SMM850

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n$ = 4 | | | | | | | | | | | |
| | | | | | | 6 | 10 | 12 | 16 | 18 | 25 | 32 | 38 | 45 | 50 |
| P | E 1 - 2 | 1.50 | 0.25 | 49 | n (rev/min) | 2600 | 1560 | 1300 | 970 | 870 | 620 | 490 | 410 | 350 | 310 |
| | | | | | $f_z$ (mm) | 0.034 | 0.056 | 0.068 | 0.090 | 0.101 | 0.141 | 0.180 | 0.214 | 0.253 | 0.281 |
| | | | | 37 - 61 | $v_f$ (mm/min) | 351 | 351 | 351 | 349 | 352 | 349 | 353 | 351 | 354 | 349 |
| | E 3 - 4 | 1.50 | 0.25 | 24 | n (rev/min) | 1270 | 760 | 640 | 480 | 420 | 310 | 240 | 200 | 170 | 150 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.079 | 0.109 | 0.140 | 0.166 | 0.197 | 0.219 |
| | | | | 18 - 30 | $v_f$ (mm/min) | 133 | 133 | 134 | 134 | 132 | 136 | 134 | 133 | 134 | 131 |
| M | E 8 - 9 | 1.50 | 0.25 | 24 | n (rev/min) | 1270 | 760 | 640 | 480 | 420 | 310 | 240 | 200 | 170 | 150 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.079 | 0.109 | 0.140 | 0.166 | 0.197 | 0.219 |
| | | | | 18 - 30 | $v_f$ (mm/min) | 133 | 133 | 134 | 134 | 132 | 136 | 134 | 133 | 134 | 131 |
| K | E 12 - 13 | 1.50 | 0.25 | 29 | n (rev/min) | 1540 | 920 | 770 | 580 | 510 | 370 | 290 | 240 | 210 | 180 |
| | | | | | $f_z$ (mm) | 0.034 | 0.056 | 0.068 | 0.090 | 0.101 | 0.141 | 0.180 | 0.214 | 0.253 | 0.281 |
| | | | | 23 - 35 | $v_f$ (mm/min) | 208 | 207 | 208 | 209 | 207 | 208 | 209 | 205 | 213 | 203 |
| N | E 18 | 1.50 | 0.25 | 107 | n (rev/min) | 5680 | 3410 | 2840 | 2130 | 1890 | 1360 | 1060 | 900 | 760 | 680 |
| | | | | | $f_z$ (mm) | 0.034 | 0.056 | 0.068 | 0.090 | 0.101 | 0.141 | 0.180 | 0.214 | 0.253 | 0.281 |
| | | | | 91 - 122 | $v_f$ (mm/min) | 767 | 767 | 767 | 767 | 765 | 765 | 763 | 770 | 770 | 765 |

| SIDE MILLING -ROUGHING $Z_n$ = 6 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.50 | 0.25 | 49 | n (rev/min) | 2600 | 1560 | 1300 | 970 | 870 | 620 | 490 | 410 | 350 | 310 |
| | | | | | $f_z$ (mm) | 0.034 | 0.056 | 0.068 | 0.090 | 0.101 | 0.141 | 0.180 | 0.214 | 0.253 | 0.281 |
| | | | | 37 - 61 | $v_f$ (mm/min) | 527 | 527 | 527 | 524 | 529 | 523 | 529 | 526 | 532 | 523 |
| | E 3 - 4 | 1.50 | 0.25 | 24 | n (rev/min) | 1270 | 760 | 640 | 480 | 420 | 310 | 240 | 200 | 170 | 150 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.079 | 0.109 | 0.140 | 0.166 | 0.197 | 0.219 |
| | | | | 18 - 30 | $v_f$ (mm/min) | 200 | 200 | 202 | 202 | 198 | 203 | 202 | 200 | 201 | 197 |
| M | E 8 - 9 | 1.50 | 0.25 | 24 | n (rev/min) | 1270 | 760 | 640 | 480 | 420 | 310 | 240 | 200 | 170 | 150 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.079 | 0.109 | 0.140 | 0.166 | 0.197 | 0.219 |
| | | | | 18 - 30 | $v_f$ (mm/min) | 200 | 200 | 202 | 202 | 198 | 203 | 202 | 200 | 201 | 197 |
| K | E 12 - 13 | 1.50 | 0.25 | 29 | n (rev/min) | 1540 | 920 | 770 | 580 | 510 | 370 | 290 | 240 | 210 | 180 |
| | | | | | $f_z$ (mm) | 0.034 | 0.056 | 0.068 | 0.090 | 0.101 | 0.141 | 0.180 | 0.214 | 0.253 | 0.281 |
| | | | | 23 - 35 | $v_f$ (mm/min) | 312 | 311 | 312 | 313 | 310 | 312 | 313 | 308 | 319 | 304 |
| N | E 18 | 1.50 | 0.25 | 107 | n (rev/min) | 5680 | 3410 | 2840 | 2130 | 1890 | 1360 | 1060 | 900 | 760 | 680 |
| | | | | | $f_z$ (mm) | 0.034 | 0.056 | 0.068 | 0.090 | 0.101 | 0.141 | 0.180 | 0.214 | 0.253 | 0.281 |
| | | | | 91 - 122 | $v_f$ (mm/min) | 1150 | 1151 | 1150 | 1150 | 1148 | 1148 | 1145 | 1154 | 1154 | 1148 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**SR208 / DR209 / DS211 / DL213 / DB215 / DBS217**

| SLOTTING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 2$ | | | | | | |
| | | | | | | 1/32 | 1/16 | 3/32 | 1/8 | 5/32 | 3/16 |
| P | E 1 - 2 | 0.50 | 1.00 | 110 | n (rev/min) | 13446 | 6723 | 4482 | 3362 | 2689 | 2241 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0004 | 0.0006 | 0.0007 | 0.0008 |
| | | | | 80 - 140 | $v_f$ (in/min) | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| | E 3 - 4 | 0.50 | 1.00 | 65 | n (rev/min) | 7946 | 3973 | 2649 | 1986 | 1589 | 1324 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0007 |
| | | | | 55 - 75 | $v_f$ (in/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| M | E 8 - 9 | 0.50 | 1.00 | 50 | n (rev/min) | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0007 |
| | | | | 40 - 60 | $v_f$ (in/min) | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| K | E 12 - 13 | 0.50 | 1.00 | 50 | n (rev/min) | 6112 | 3056 | 2037 | 1528 | 1222 | 1019 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0004 | 0.0006 | 0.0007 | 0.0008 |
| | | | | 40 - 60 | $v_f$ (in/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| N | E 16 | 0.50 | 1.00 | 240 | n (rev/min) | 29338 | 14669 | 9779 | 7334 | 5868 | 4890 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0008 | 0.0009 |
| | | | | 220 - 260 | $v_f$ (in/min) | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 |
| | E 17 | 0.50 | 1.00 | 240 | n (rev/min) | 29338 | 14669 | 9779 | 7334 | 5868 | 4890 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0008 | 0.0009 |
| | | | | 220 - 260 | $v_f$ (in/min) | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 |
| | E 18 | 0.50 | 1.00 | 200 | n (rev/min) | 24448 | 12224 | 8149 | 6112 | 4890 | 4075 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0008 | 0.0009 |
| | | | | 180 - 220 | $v_f$ (in/min) | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.00 | 0.25 | 160 | n (rev/min) | 19558 | 9779 | 6519 | 4890 | 3912 | 3260 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 |
| | | | | 120 - 200 | $v_f$ (in/min) | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| | E 3 - 4 | 1.00 | 0.25 | 100 | n (rev/min) | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0007 | 0.0008 |
| | | | | 80 - 120 | $v_f$ (in/min) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| M | E 8 - 9 | 1.00 | 0.25 | 80 | n (rev/min) | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0007 | 0.0008 |
| | | | | 60 - 100 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| K | E 12 - 13 | 1.00 | 0.25 | 95 | n (rev/min) | 11613 | 5806 | 3871 | 2903 | 2323 | 1935 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 |
| | | | | 75 - 115 | $v_f$ (in/min) | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| N | E 16 | 1.00 | 0.25 | 350 | n (rev/min) | 42784 | 21392 | 14261 | 10696 | 8557 | 7131 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 |
| | | | | 330 - 370 | $v_f$ (in/min) | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 |
| | E 17 | 1.00 | 0.25 | 350 | n (rev/min) | 42784 | 21392 | 14261 | 10696 | 8557 | 7131 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 |
| | | | | 330 - 370 | $v_f$ (in/min) | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 |
| | E 18 | 1.00 | 0.25 | 300 | n (rev/min) | 36672 | 18336 | 12224 | 9168 | 7334 | 6112 |
| | | | | | $f_z$ (in) | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 |
| | | | | 280 - 320 | $v_f$ (in/min) | 14.3 | 14.3 | 14.3 | 14.3 | 14.3 | 14.3 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

**SR414 / DR416 / DS420 / DL418**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ | | | | | | |
| | | | | | | 1/32 | 1/16 | 3/32 | 1/8 | 5/32 | 3/16 |
| P | E 1 - 2 | 1.00 | 0.15 | 160 | n (rev/min) | 19558 | 9779 | 6519 | 4890 | 3912 | 3260 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0006 | 0.0007 |
| | | | | 120 - 200 | $v_f$ (in/min) | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 |
| | E 3 - 4 | 1.00 | 0.15 | 100 | n (rev/min) | 12224 | 6112 | 4075 | 3056 | 2445 | 2037 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0006 |
| | | | | 80 - 120 | $v_f$ (in/min) | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 |
| M | E 8 - 9 | 1.00 | 0.15 | 80 | n (rev/min) | 9779 | 4890 | 3260 | 2445 | 1956 | 1630 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0006 |
| | | | | 60 - 100 | $v_f$ (in/min) | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| K | E 12 - 13 | 1.00 | 0.15 | 95 | n (rev/min) | 11613 | 5806 | 3871 | 2903 | 2323 | 1935 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0006 | 0.0007 |
| | | | | 75 - 115 | $v_f$ (in/min) | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| N | E 18 | 1.00 | 0.15 | 350 | n (rev/min) | 42784 | 21392 | 14261 | 10696 | 8557 | 7131 |
| | | | | | $f_z$ (in) | 0.0001 | 0.0003 | 0.0004 | 0.0006 | 0.0007 | 0.0008 |
| | | | | 300 - 400 | $v_f$ (in/min) | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

## COBALT

General purpose M42 cobalt roughers and finishers are available in a wide variety of sizes in both center cutting and non center cutting geometries.

The new VFP geometry is designed specifically for high metal removal rates in stainless steel and titanium alloys.

Our EXCEL end mills are a revolutionary solution that combines superior geometry, high grade cobalt substrate and wear resistant PVD coatings to handle difficult milling applications.

# GENERAL PURPOSE- SP205

M42
8% COBALT

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for pocketing and slotting in all materials including high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N50041 | SP205-0.125-F3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 2-5/16 | 2 | |
| N88565 | SP205-0.125-F3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 2-5/16 | 2 | TiCN |
| N50051 | SP205-0.156-F3-S.3-Z2 | 5/32 | 3/8 | 7/16 | 2-5/16 | 2 | |
| N88566 | SP205-0.156-F3-S.3-Z2 | 5/32 | 3/8 | 7/16 | 2-5/16 | 2 | TiCN |
| N50061 | SP205-0.188-F2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 2-5/16 | 2 | |
| N88567 | SP205-0.188-F2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 2-5/16 | 2 | TiCN |
| N50071 | SP205-0.219-F2-S.3-Z2 | 7/32 | 3/8 | 1/2 | 2-5/16 | 2 | |
| N88568 | SP205-0.219-F2-S.3-Z2 | 7/32 | 3/8 | 1/2 | 2-5/16 | 2 | TiCN |
| N50081 | SP205-0.250-F2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 2-5/16 | 2 | |
| N88569 | SP205-0.250-F2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 2-5/16 | 2 | TiCN |
| N50091 | SP205-0.281-F2-S.3-Z2 | 9/32 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N88570 | SP205-0.281-F2-S.3-Z2 | 9/32 | 3/8 | 9/16 | 2-5/16 | 2 | TiCN |
| N50101 | SP205-0.313-F2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N88571 | SP205-0.313-F2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 2-5/16 | 2 | TiCN |
| N50121 | SP205-0.375-D2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 2-5/16 | 2 | |
| N88573 | SP205-0.375-D2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 2-5/16 | 2 | TiCN |
| N50141 | SP205-0.438-P2-S.3-Z2 | 7/16 | 3/8 | 13/16 | 2-1/2 | 2 | |
| N88574 | SP205-0.438-P2-S.3-Z2 | 7/16 | 3/8 | 13/16 | 2-1/2 | 2 | TiCN |
| N50161 | SP205-0.500-P2-S.3-Z2 | 1/2 | 3/8 | 13/16 | 2-1/2 | 2 | |
| N88575 | SP205-0.500-P2-S.3-Z2 | 1/2 | 3/8 | 13/16 | 2-1/2 | 2 | TiCN |
| N50162 | SP205-0.500-D2-S.3-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | |
| N88576 | SP205-0.500-D2-S.3-Z2 | 1/2 | 1/2 | 1 | 3 | 2 | TiCN |
| N50182 | SP205-0.563-P2-S.3-Z2 | 9/16 | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N88577 | SP205-0.563-P2-S.3-Z2 | 9/16 | 1/2 | 1-1/8 | 3-1/8 | 2 | TiCN |
| N50203 | SP205-0.625-D2-S.3-Z2 | 5/8 | 5/8 | 1-5/16 | 3-7/16 | 2 | |
| N88578 | SP205-0.625-D2-S.3-Z2 | 5/8 | 5/8 | 1-5/16 | 3-7/16 | 2 | TiCN |
| N50242 | SP205-0.750-P2-S.3-Z2 | 3/4 | 1/2 | 1-5/16 | 3-5/16 | 2 | |
| N88579 | SP205-0.750-P2-S.3-Z2 | 3/4 | 1/2 | 1-5/16 | 3-5/16 | 2 | TiCN |
| N50244 | SP205-0.750-D2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 3-9/16 | 2 | |
| N88580 | SP205-0.750-D2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 3-9/16 | 2 | TiCN |
| N50285 | SP205-0.875-D2-S.3-Z2 | 7/8 | 7/8 | 1-1/2 | 3-3/4 | 2 | |
| N88581 | SP205-0.875-D2-S.3-Z2 | 7/8 | 7/8 | 1-1/2 | 3-3/4 | 2 | TiCN |
| N50324 | SP205-1.000-P2-S.3-Z2 | 1 | 3/4 | 1-1/2 | 3-3/4 | 2 | |
| N88582 | SP205-1.000-P2-S.3-Z2 | 1 | 3/4 | 1-1/2 | 3-3/4 | 2 | TiCN |
| N50326 | SP205-1.000-D2-S.3-Z2 | 1 | 1 | 1-5/8 | 4-1/8 | 2 | |
| N88583 | SP205-1.000-D2-S.3-Z2 | 1 | 1 | 1-5/8 | 4-1/8 | 2 | TiCN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- SP205

M42
8% COBALT

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for pocketing and slotting in all materials including high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N50366 | SP205-1.125-P1-S.3-Z2 | 1-1/8 | 1 | 1-5/8 | 4-1/8 | 2 | |
| N88584 | SP205-1.125-P1-S.3-Z2 | 1-1/8 | 1 | 1-5/8 | 4-1/8 | 2 | TiCN |
| N50407 | SP205-1.250-D1-S.3-Z2 | 1-1/4 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | |
| N88586 | SP205-1.250-D1-S.3-Z2 | 1-1/4 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | TiCN |
| N50487 | SP205-1.500-P1-S.3-Z2 | 1-1/2 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | |
| N88587 | SP205-1.500-P1-S.3-Z2 | 1-1/2 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | TiCN |
| N50647 | SP205-2.000-P1-S.3-Z2 | 2 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | |
| N88588 | SP205-2.000-P1-S.3-Z2 | 2 | 1-1/4 | 1-5/8 | 4-1/8 | 2 | TiCN |

# GENERAL PURPOSE- DP530

M42
8% COBALT

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for pocketing and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N53041 | DP530-0.125-XF3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 3-1/16 | 2 | |
| N88672 | DP530-0.125-XF3-S.3-Z2 | 1/8 | 3/8 | 3/8 | 3-1/16 | 2 | TiCN |
| N53051 | DP530-0.156-XF3-S.3-Z2 | 5/32 | 3/8 | 7/16 | 3-1/8 | 2 | |
| N88673 | DP530-0.156-XF3-S.3-Z2 | 5/32 | 3/8 | 7/16 | 3-1/8 | 2 | TiCN |
| N53061 | DP530-0.188-XF2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 3-1/8 | 2 | |
| N88674 | DP530-0.188-XF2-S.3-Z2 | 3/16 | 3/8 | 7/16 | 3-1/8 | 2 | TiCN |
| N53071 | DP530-0.219-XF2-S.3-Z2 | 7/32 | 3/8 | 1/2 | 3-1/8 | 2 | |
| N88675 | DP530-0.219-XF2-S.3-Z2 | 7/32 | 3/8 | 1/2 | 3-1/8 | 2 | TiCN |
| N53081 | DP530-0.250-XF2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 3-1/8 | 2 | |
| N88676 | DP530-0.250-XF2-S.3-Z2 | 1/4 | 3/8 | 1/2 | 3-1/8 | 2 | TiCN |
| N53091 | DP530-0.281-XF2-S.3-Z2 | 9/32 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N88677 | DP530-0.281-XF2-S.3-Z2 | 9/32 | 3/8 | 9/16 | 3-1/8 | 2 | TiCN |
| N53101 | DP530-0.313-XF2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N88678 | DP530-0.313-XF2-S.3-Z2 | 5/16 | 3/8 | 9/16 | 3-1/8 | 2 | TiCN |
| N53121 | DP530-0.375-XD2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 3-1/8 | 2 | |
| N88680 | DP530-0.375-XD2-S.3-Z2 | 3/8 | 3/8 | 9/16 | 3-1/8 | 2 | TiCN |
| N53142 | DP530-0.438-XF2-S.3-Z2 | 7/16 | 1/2 | 13/16 | 3-3/4 | 2 | |
| N88681 | DP530-0.438-XF2-S.3-Z2 | 7/16 | 1/2 | 13/16 | 3-3/4 | 2 | TiCN |
| N53162 | DP530-0.500-XD2-S.3-Z2 | 1/2 | 1/2 | 13/16 | 3-3/4 | 2 | |
| N88682 | DP530-0.500-XD2-S.3-Z2 | 1/2 | 1/2 | 13/16 | 3-3/4 | 2 | TiCN |
| N53203 | DP530-0.625-XD2-S.3-Z2 | 5/8 | 5/8 | 1-1/8 | 4-1/2 | 2 | |
| N88684 | DP530-0.625-XD2-S.3-Z2 | 5/8 | 5/8 | 1-1/8 | 4-1/2 | 2 | TiCN |
| N53244 | DP530-0.750-XD2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 5 | 2 | |
| N88685 | DP530-0.750-XD2-S.3-Z2 | 3/4 | 3/4 | 1-5/16 | 5 | 2 | TiCN |
| N53285 | DP530-0.875-XD2-S.3-Z2 | 7/8 | 7/8 | 1-9/16 | 5-1/2 | 2 | |
| N88686 | DP530-0.875-XD2-S.3-Z2 | 7/8 | 7/8 | 1-9/16 | 5-1/2 | 2 | TiCN |
| N53326 | DP530-1.000-XD2-S.3-Z2 | 1 | 1 | 1-5/8 | 5-7/8 | 2 | |
| N88687 | DP530-1.000-XD2-S.3-Z2 | 1 | 1 | 1-5/8 | 5-7/8 | 2 | TiCN |

DISCOUNT CODE D40

# GENERAL PURPOSE- SMM835

M42
8% COBALT

HELIX
30°

SQUARE END

CENTER CUTTING

- Metric flute / inch shank
- Weldon flat standard
- Designed for pocketing in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N72840 | SMM835-0.079-F4-S.3-Z2 | 2mm | 3/8 | 5/16 | 2-5/16 | 2 | |
| N88934 | SMM835-0.079-F4-S.3-Z2 | 2mm | 3/8 | 5/16 | 2-5/16 | 2 | TiCN |
| N72843 | SMM835-0.197-F3-S.3-Z2 | 5mm | 3/8 | 1/2 | 2-5/16 | 2 | |
| N88937 | SMM835-0.197-F3-S.3-Z2 | 5mm | 3/8 | 1/2 | 2-5/16 | 2 | TiCN |
| N72844 | SMM835-0.236-F2-S.3-Z2 | 6mm | 3/8 | 1/2 | 2-5/16 | 2 | |
| N88938 | SMM835-0.236-F2-S.3-Z2 | 6mm | 3/8 | 1/2 | 2-5/16 | 2 | TiCN |
| N72847 | SMM835-0.394-P2-S.3-Z2 | 10mm | 3/8 | 13/16 | 2-1/2 | 2 | |
| N88941 | SMM835-0.394-P2-S.3-Z2 | 10mm | 3/8 | 13/16 | 2-1/2 | 2 | TiCN |
| N72848 | SMM835-0.472-F2-S.3-Z2 | 12mm | 1/2 | 13/16 | 2-1/2 | 2 | |
| N88942 | SMM835-0.472-F2-S.3-Z2 | 12mm | 1/2 | 13/16 | 2-1/2 | 2 | TiCN |
| N72849 | SMM835-0.551-P2-S.3-Z2 | 14mm | 1/2 | 1-1/8 | 3-1/8 | 2 | |
| N88943 | SMM835-0.551-P2-S.3-Z2 | 14mm | 1/2 | 1-1/8 | 3-1/8 | 2 | TiCN |
| N72850 | SMM835-0.630-P2-S.3-Z2 | 16mm | 5/8 | 1-5/16 | 3-7/16 | 2 | |
| N88944 | SMM835-0.630-P2-S.3-Z2 | 16mm | 5/8 | 1-5/16 | 3-7/16 | 2 | TiCN |

# EXCEL SERIES- EX350

PREMIUM PARTICLE METAL
8.5% COBALT

HELIX
35°

SQUARE END

CENTER CUTTING

- Form ground flutes
- Weldon flat standard

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N53342 | EX350-0.375-D7-S.3-Z4 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 4 | |
| N53458 | EX350-0.375-D7-S.3-Z4 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 4 | TiCN |
| N53343 | EX350-0.500-D1-S.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | |
| N53459 | EX350-0.500-D1-S.3-Z4 | 1/2 | 1/2 | 1/2 | 2-1/2 | 4 | TiCN |
| N53344 | EX350-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N53460 | EX350-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiCN |
| N53346 | EX350-0.500-D8-S.3-Z4 | 1/2 | 1/2 | 4 | 6 | 4 | |
| N53462 | EX350-0.500-D8-S.3-Z4 | 1/2 | 1/2 | 4 | 6 | 4 | TiCN |
| N53347 | EX350-0.625-D1-S.3-Z4 | 5/8 | 5/8 | 5/8 | 2-3/4 | 4 | |
| N53463 | EX350-0.625-D1-S.3-Z4 | 5/8 | 5/8 | 5/8 | 2-3/4 | 4 | TiCN |
| N53348 | EX350-0.625-D3-S.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N53464 | EX350-0.625-D3-S.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN |
| N53352 | EX350-0.750-D1-S.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | |
| N53468 | EX350-0.750-D1-S.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | TiCN |
| N53353 | EX350-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N53469 | EX350-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiCN |
| N53355 | EX350-0.750-D3-S.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | |
| N53471 | EX350-0.750-D3-S.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | TiCN |
| N53357 | EX350-0.750-D4-S.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | |
| N53473 | EX350-0.750-D4-S.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiCN |
| N53359 | EX350-0.750-D5-S.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | |
| N53475 | EX350-0.750-D5-S.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | TiCN |
| N53363 | EX350-1.000-D1-S.3-Z4 | 1 | 1 | 1 | 3-1/2 | 4 | |
| N53479 | EX350-1.000-D1-S.3-Z4 | 1 | 1 | 1 | 3-1/2 | 4 | TiCN |
| N53364 | EX350-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | |
| N53480 | EX350-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | TiCN |
| N53366 | EX350-1.000-D3-S.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | |
| N53482 | EX350-1.000-D3-S.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | TiCN |
| N53368 | EX350-1.000-D4-S.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | |
| N53484 | EX350-1.000-D4-S.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | TiCN |
| N53370 | EX350-1.000-D6-S.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | |
| N53486 | EX350-1.000-D6-S.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | TiCN |
| N53374 | EX350-1.250-D3-S.3-Z4 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 4 | |
| N53490 | EX350-1.250-D3-S.3-Z4 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 4 | TiCN |
| N53375 | EX350-1.250-D3-S.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | |
| N53491 | EX350-1.250-D3-S.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | TiCN |
| N53379 | EX350-1.250-D5-S.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | |
| N53495 | EX350-1.250-D5-S.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | TiCN |
| N53385 | EX350-1.500-P3-S.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N53501 | EX350-1.500-P3-S.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | TiCN |
| N53395 | EX350-2.000-D4-S.7-Z6 | 2 | 2 | 6 | 9-3/4 | 6 | |
| N53511 | EX350-2.000-D4-S.7-Z6 | 2 | 2 | 6 | 9-3/4 | 6 | TiCN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- SP408

M42
8% COBALT

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N46668 | SP408-0.125-F3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 2-5/16 | 4 | |
| N46870 | SP408-0.125-F3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 2-5/16 | 4 | TiCN |
| N46670 | SP408-0.188-F3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | |
| N46872 | SP408-0.188-F3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | TiCN |
| N46672 | SP408-0.250-F3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N46874 | SP408-0.250-F3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiCN |
| N46676 | SP408-0.313-F2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N46878 | SP408-0.313-F2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN |
| N46680 | SP408-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N46882 | SP408-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN |
| N46681 | SP408-0.375-D4-S.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | |
| N46883 | SP408-0.375-D4-S.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiCN |
| N46688 | SP408-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N46890 | SP408-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiCN |
| N46690 | SP408-0.500-D4-S.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | |
| N46892 | SP408-0.500-D4-S.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiCN |
| N46696 | SP408-0.625-D3-S.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N46898 | SP408-0.625-D3-S.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN |
| N46698 | SP408-0.625-D4-S.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | |
| N46900 | SP408-0.625-D4-S.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | TiCN |
| N46706 | SP408-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N46908 | SP408-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiCN |
| N46707 | SP408-0.750-D2-S.3-Z6 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 6 | |
| N46909 | SP408-0.750-D2-S.3-Z6 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 6 | TiCN |
| N46708 | SP408-0.750-D4-S.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | |
| N46910 | SP408-0.750-D4-S.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiCN |
| N46709 | SP408-0.750-D5-S.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | |
| N46911 | SP408-0.750-D5-S.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | TiCN |
| N46710 | SP408-0.781-P2-S.3-Z4 | 25/32 | 5/8 | 1-7/8 | 4 | 4 | |
| N46912 | SP408-0.781-P2-S.3-Z4 | 25/32 | 5/8 | 1-7/8 | 4 | 4 | TiCN |
| N46711 | SP408-0.813-P2-S.3-Z4 | 13/16 | 5/8 | 1-7/8 | 4 | 4 | |
| N46913 | SP408-0.813-P2-S.3-Z4 | 13/16 | 5/8 | 1-7/8 | 4 | 4 | TiCN |
| N46714 | SP408-0.875-P2-S.3-Z4 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N46916 | SP408-0.875-P2-S.3-Z4 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiCN |
| N46722 | SP408-1.000-P2-S.3-Z4 | 1 | 3/4 | 1-7/8 | 4-1/8 | 4 | |

DISCOUNT CODE D40

# GENERAL PURPOSE- SP408

M42
8% COBALT

HELIX
30°

SQUARE END

NON CENTER CUTTING

- Weldon flat standard
- Designed for profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N46924 | SP408-1.000-P2-S.3-Z4 | 1 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiCN |
| N46724 | SP408-1.000-P1-S.3-Z4 | 1 | 7/8 | 1-7/8 | 4-1/8 | 4 | |
| N46926 | SP408-1.000-P1-S.3-Z4 | 1 | 7/8 | 1-7/8 | 4-1/8 | 4 | TiCN |
| N46726 | SP408-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | |
| N46928 | SP408-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | TiCN |
| N46728 | SP408-1.000-D3-S.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | |
| N46930 | SP408-1.000-D3-S.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | TiCN |
| N46730 | SP408-1.000-D4-S.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | |
| N46932 | SP408-1.000-D4-S.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | TiCN |
| N46739 | SP408-1.125-P4-S.3-Z6 | 1-1/8 | 1 | 4 | 6-1/2 | 6 | |
| N46941 | SP408-1.125-P4-S.3-Z6 | 1-1/8 | 1 | 4 | 6-1/2 | 6 | TiCN |
| N46744 | SP408-1.250-D2-S.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | |
| N46946 | SP408-1.250-D2-S.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | TiCN |
| N46745 | SP408-1.250-D3-S.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N46947 | SP408-1.250-D3-S.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | TiCN |
| N46747 | SP408-1.250-D5-S.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | |
| N46949 | SP408-1.250-D5-S.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | TiCN |
| N46753 | SP408-1.500-P5-S.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N46955 | SP408-1.500-P5-S.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | TiCN |
| N46754 | SP408-1.500-P6-S.3-Z6 | 1-1/2 | 1-1/4 | 5 | 7-1/2 | 6 | |
| N46956 | SP408-1.500-P6-S.3-Z6 | 1-1/2 | 1-1/4 | 5 | 7-1/2 | 6 | TiCN |
| N46755 | SP408-1.500-P7-S.3-Z6 | 1-1/2 | 1-1/4 | 6 | 8-1/2 | 6 | |
| N46957 | SP408-1.500-P7-S.3-Z6 | 1-1/2 | 1-1/4 | 6 | 8-1/2 | 6 | TiCN |
| N46756 | SP408-1.500-P8-S.3-Z6 | 1-1/2 | 1-1/4 | 8 | 10-1/2 | 6 | |
| N46958 | SP408-1.500-P8-S.3-Z6 | 1-1/2 | 1-1/4 | 8 | 10-1/2 | 6 | TiCN |
| N46768 | SP408-2.000-D4-S.7-Z6 | 2 | 2 | 8 | 11-3/4 | 6 | |
| N46970 | SP408-2.000-D4-S.7-Z6 | 2 | 2 | 8 | 11-3/4 | 6 | TiCN |

# GENERAL PURPOSE- SPC408

M42
8% COBALT

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N52041 | SPC408-0.125-F3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 2-5/16 | 4 | |
| N88604 | SPC408-0.125-F3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 2-5/16 | 4 | TiCN |
| N52051 | SPC408-0.156-F3-S.3-Z4 | 5/32 | 3/8 | 1/2 | 2-3/8 | 4 | |
| N88605 | SPC408-0.156-F3-S.3-Z4 | 5/32 | 3/8 | 1/2 | 2-3/8 | 4 | TiCN |
| N52049 | SPC408-0.188-F1-S.3-Z4 | 3/16 | 3/8 | 3/16 | 2-1/16 | 4 | |
| N89446 | SPC408-0.188-F1-S.3-Z4 | 3/16 | 3/8 | 3/16 | 2-1/16 | 4 | TiCN |
| N52061 | SPC408-0.188-F3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | |
| N88606 | SPC408-0.188-F3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | TiCN |
| N52071 | SPC408-0.219-F3-S.3-Z4 | 7/32 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N88607 | SPC408-0.219-F3-S.3-Z4 | 7/32 | 3/8 | 5/8 | 2-7/16 | 4 | TiCN |
| N52069 | SPC408-0.250-F1-S.3-Z4 | 1/4 | 3/8 | 1/4 | 2-1/16 | 4 | |
| N89447 | SPC408-0.250-F1-S.3-Z4 | 1/4 | 3/8 | 1/4 | 2-1/16 | 4 | TiCN |
| N52081 | SPC408-0.250-F3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N88608 | SPC408-0.250-F3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiCN |
| N52082 | SPC408-0.250-F5-S.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | |
| N88609 | SPC408-0.250-F5-S.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | TiCN |
| N52083 | SPC408-0.250-F7-S.3-Z4 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 4 | |
| N88610 | SPC408-0.250-F7-S.3-Z4 | 1/4 | 3/8 | 1-3/4 | 3-9/16 | 4 | TiCN |
| N52091 | SPC408-0.281-F2-S.3-Z4 | 9/32 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N88611 | SPC408-0.281-F2-S.3-Z4 | 9/32 | 3/8 | 5/8 | 2-7/16 | 4 | TiCN |
| N52109 | SPC408-0.313-F1-S.3-Z4 | 5/16 | 3/8 | 5/16 | 2-1/16 | 4 | |
| N89448 | SPC408-0.313-F1-S.3-Z4 | 5/16 | 3/8 | 5/16 | 2-1/16 | 4 | TiCN |
| N52101 | SPC408-0.313-F2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N88612 | SPC408-0.313-F2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN |
| N52102 | SPC408-0.313-F4-S.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | |
| N88613 | SPC408-0.313-F4-S.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | TiCN |
| N52103 | SPC408-0.313-F6-S.3-Z4 | 5/16 | 3/8 | 2 | 3-3/4 | 4 | |
| N88614 | SPC408-0.313-F6-S.3-Z4 | 5/16 | 3/8 | 2 | 3-3/4 | 4 | TiCN |
| N52129 | SPC408-0.375-D1-S.3-Z4 | 3/8 | 3/8 | 3/8 | 2-1/8 | 4 | |
| N89449 | SPC408-0.375-D1-S.3-Z4 | 3/8 | 3/8 | 3/8 | 2-1/8 | 4 | TiCN |
| N52121 | SPC408-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N88616 | SPC408-0.375-D2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN |
| N52122 | SPC408-0.375-D4-S.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | |
| N88617 | SPC408-0.375-D4-S.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiCN |
| N52123 | SPC408-0.375-D7-S.3-Z4 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 4 | |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- SPC408

M42
8% COBALT

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N88618 | SPC408-0.375-D7-S.3-Z4 | 3/8 | 3/8 | 2-1/2 | 4-1/4 | 4 | TiCN |
| N52141 | SPC408-0.438-P2-S.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | |
| N88619 | SPC408-0.438-P2-S.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | TiCN |
| N52142 | SPC408-0.438-P5-S.3-Z4 | 7/16 | 3/8 | 2 | 3-11/16 | 4 | |
| N88620 | SPC408-0.438-P5-S.3-Z4 | 7/16 | 3/8 | 2 | 3-11/16 | 4 | TiCN |
| N52166 | SPC408-0.500-P2-S.3-Z4 | 1/2 | 3/8 | 1 | 2-11/16 | 4 | |
| N88625 | SPC408-0.500-P2-S.3-Z4 | 1/2 | 3/8 | 1 | 2-11/16 | 4 | TiCN |
| N52160 | SPC408-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N88621 | SPC408-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiCN |
| N52162 | SPC408-0.500-D3-S.3-Z6 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 6 | |
| N88622 | SPC408-0.500-D3-S.3-Z6 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 6 | TiCN |
| N52163 | SPC408-0.500-D4-S.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | |
| N88623 | SPC408-0.500-D4-S.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiCN |
| N52164 | SPC408-0.500-D6-S.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | |
| N88624 | SPC408-0.500-D6-S.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | TiCN |
| N52167 | SPC408-0.500-D8-S.3-Z4 | 1/2 | 1/2 | 4 | 6 | 4 | |
| N88626 | SPC408-0.500-D8-S.3-Z4 | 1/2 | 1/2 | 4 | 6 | 4 | TiCN |
| N52182 | SPC408-0.563-P2-S.3-Z4 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N88627 | SPC408-0.563-P2-S.3-Z4 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 4 | TiCN |
| N52200 | SPC408-0.625-D3-S.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N88628 | SPC408-0.625-D3-S.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN |
| N52203 | SPC408-0.625-D3-S.3-Z6 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 6 | |
| N88631 | SPC408-0.625-D3-S.3-Z6 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 6 | TiCN |
| N52201 | SPC408-0.625-D4-S.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | |
| N88629 | SPC408-0.625-D4-S.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | TiCN |
| N52202 | SPC408-0.625-D5-S.3-Z4 | 5/8 | 5/8 | 3 | 5-1/8 | 4 | |
| N88630 | SPC408-0.625-D5-S.3-Z4 | 5/8 | 5/8 | 3 | 5-1/8 | 4 | TiCN |
| N52204 | SPC408-0.625-D6-S.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | |
| N88632 | SPC408-0.625-D6-S.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | TiCN |
| N52206 | SPC408-0.750-P2-S.3-Z4 | 3/4 | 1/2 | 1-5/8 | 3-5/8 | 4 | |
| N88633 | SPC408-0.750-P2-S.3-Z4 | 3/4 | 1/2 | 1-5/8 | 3-5/8 | 4 | TiCN |
| N52240 | SPC408-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N88634 | SPC408-0.750-D2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiCN |
| N52244 | SPC408-0.750-D2-S.3-Z6 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 6 | |
| N88638 | SPC408-0.750-D2-S.3-Z6 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 6 | TiCN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- SPC408

M42
8% COBALT

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N52241 | SPC408-0.750-D3-S.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | |
| N88635 | SPC408-0.750-D3-S.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | TiCN |
| N52242 | SPC408-0.750-D4-S.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | |
| N88636 | SPC408-0.750-D4-S.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiCN |
| N52243 | SPC408-0.750-D5-S.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | |
| N88637 | SPC408-0.750-D5-S.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | TiCN |
| N52247 | SPC408-0.750-D5-S.3-Z6 | 3/4 | 3/4 | 4 | 6-1/4 | 6 | |
| N88640 | SPC408-0.750-D5-S.3-Z6 | 3/4 | 3/4 | 4 | 6-1/4 | 6 | TiCN |
| N52285 | SPC408-0.875-D2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 4 | |
| N88642 | SPC408-0.875-D2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 4 | TiCN |
| N52286 | SPC408-0.875-D4-S.3-Z4 | 7/8 | 7/8 | 3-1/2 | 5-3/4 | 4 | |
| N88643 | SPC408-0.875-D4-S.3-Z4 | 7/8 | 7/8 | 3-1/2 | 5-3/4 | 4 | TiCN |
| N52334 | SPC408-1.000-P2-S.3-Z4 | 1 | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N88652 | SPC408-1.000-P2-S.3-Z4 | 1 | 3/4 | 1-7/8 | 4-1/8 | 4 | TiCN |
| N52320 | SPC408-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | |
| N88644 | SPC408-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | TiCN |
| N52326 | SPC408-1.000-D2-S.3-Z6 | 1 | 1 | 2 | 4-1/2 | 6 | |
| N88649 | SPC408-1.000-D2-S.3-Z6 | 1 | 1 | 2 | 4-1/2 | 6 | TiCN |
| N52321 | SPC408-1.000-D3-S.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | |
| N88645 | SPC408-1.000-D3-S.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | TiCN |
| N52327 | SPC408-1.000-D3-S.3-Z6 | 1 | 1 | 3 | 5-1/2 | 6 | |
| N88650 | SPC408-1.000-D3-S.3-Z6 | 1 | 1 | 3 | 5-1/2 | 6 | TiCN |
| N52322 | SPC408-1.000-D4-S.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | |
| N88646 | SPC408-1.000-D4-S.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | TiCN |
| N52324 | SPC408-1.000-D4-S.3-Z6 | 1 | 1 | 4 | 6-1/2 | 6 | |
| N88648 | SPC408-1.000-D4-S.3-Z6 | 1 | 1 | 4 | 6-1/2 | 6 | TiCN |
| N52323 | SPC408-1.000-D6-S.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | |
| N88647 | SPC408-1.000-D6-S.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | TiCN |
| N52329 | SPC408-1.000-D6-S.3-Z6 | 1 | 1 | 6 | 8-1/2 | 6 | |
| N88651 | SPC408-1.000-D6-S.3-Z6 | 1 | 1 | 6 | 8-1/2 | 6 | TiCN |
| N52366 | SPC408-1.125-P2-S.3-Z6 | 1-1/8 | 1 | 2 | 4-1/2 | 6 | |
| N88653 | SPC408-1.125-P2-S.3-Z6 | 1-1/8 | 1 | 2 | 4-1/2 | 6 | TiCN |
| N52367 | SPC408-1.125-P4-S.3-Z6 | 1-1/8 | 1 | 4 | 6-1/2 | 6 | |
| N88654 | SPC408-1.125-P4-S.3-Z6 | 1-1/8 | 1 | 4 | 6-1/2 | 6 | TiCN |
| N52414 | SPC408-1.250-P2-S.3-Z4 | 1-1/4 | 1 | 2 | 4-1/2 | 4 | |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- SPC408

M42
8% COBALT

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N88663 | SPC408-1.250-P2-S.3-Z4 | 1-1/4 | 1 | 2 | 4-1/2 | 4 | TiCN |
| N52416 | SPC408-1.250-P2-S.3-Z6 | 1-1/4 | 1 | 2 | 4-1/2 | 6 | |
| N88664 | SPC408-1.250-P2-S.3-Z6 | 1-1/4 | 1 | 2 | 4-1/2 | 6 | TiCN |
| N52400 | SPC408-1.250-D1-S.3-Z4 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 4 | |
| N88655 | SPC408-1.250-D1-S.3-Z4 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 4 | TiCN |
| N52407 | SPC408-1.250-D1-S.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N88660 | SPC408-1.250-D1-S.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | TiCN |
| N52401 | SPC408-1.250-D2-S.3-Z4 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 4 | |
| N88656 | SPC408-1.250-D2-S.3-Z4 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 4 | TiCN |
| N52406 | SPC408-1.250-D2-S.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | |
| N88659 | SPC408-1.250-D2-S.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | TiCN |
| N52402 | SPC408-1.250-D3-S.3-Z4 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 4 | |
| N88657 | SPC408-1.250-D3-S.3-Z4 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 4 | TiCN |
| N52409 | SPC408-1.250-D3-S.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N88661 | SPC408-1.250-D3-S.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | TiCN |
| N52403 | SPC408-1.250-D5-S.3-Z4 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 4 | |
| N88658 | SPC408-1.250-D5-S.3-Z4 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 4 | TiCN |
| N52410 | SPC408-1.250-D5-S.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | |
| N88662 | SPC408-1.250-D5-S.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | TiCN |
| N52480 | SPC408-1.500-P1-S.3-Z4 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 4 | |
| N88665 | SPC408-1.500-P1-S.3-Z4 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 4 | TiCN |
| N52487 | SPC408-1.500-P1-S.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N88667 | SPC408-1.500-P1-S.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | TiCN |
| N52486 | SPC408-1.500-P4-S.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N88666 | SPC408-1.500-P4-S.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | TiCN |
| N52499 | SPC408-1.500-P5-S.3-Z6 | 1-1/2 | 1-1/4 | 8 | 10-1/2 | 6 | |
| N88669 | SPC408-1.500-P5-S.3-Z6 | 1-1/2 | 1-1/4 | 8 | 10-1/2 | 6 | TiCN |
| N52644 | SPC408-2.000-P1-S.3-Z6 | 2 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N88670 | SPC408-2.000-P1-S.3-Z6 | 2 | 1-1/4 | 2 | 4-1/2 | 6 | TiCN |
| N52646 | SPC408-2.000-P2-S.3-Z6 | 2 | 1-1/4 | 4 | 6-1/2 | 6 | |
| N88671 | SPC408-2.000-P2-S.3-Z6 | 2 | 1-1/4 | 4 | 6-1/2 | 6 | TiCN |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- SPB540

M42
8% COBALT

HELIX
30°

BALL END

CENTER CUTTING

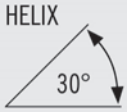
- Weldon flat standard
- Designed for profiling and contouring in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N54041 | SPB540-0.125-F3-B.3-Z4 | 1/8 | 3/8 | 3/8 | 2-5/16 | 4 | |
| N88688 | SPB540-0.125-F3-B.3-Z4 | 1/8 | 3/8 | 3/8 | 2-5/16 | 4 | TiCN |
| N54061 | SPB540-0.188-F3-B.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | |
| N88689 | SPB540-0.188-F3-B.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | TiCN |
| N54081 | SPB540-0.250-F3-B.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | |
| N88690 | SPB540-0.250-F3-B.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiCN |
| N67268 | SPB540-0.250-F5-B.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/8 | 4 | |
| N67338 | SPB540-0.250-F5-B.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/8 | 4 | TiCN |
| N54121 | SPB540-0.375-D2-B.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | |
| N88692 | SPB540-0.375-D2-B.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN |
| N67272 | SPB540-0.375-D4-B.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | |
| N67342 | SPB540-0.375-D4-B.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiCN |
| N67275 | SPB540-0.500-D2-B.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | |
| N67345 | SPB540-0.500-D2-B.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiCN |
| N54160 | SPB540-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N88693 | SPB540-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiCN |
| N67276 | SPB540-0.500-D4-B.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | |
| N67346 | SPB540-0.500-D4-B.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiCN |
| N67277 | SPB540-0.500-D5-B.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | |
| N67347 | SPB540-0.500-D5-B.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiCN |
| N54200 | SPB540-0.625-D3-B.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N88694 | SPB540-0.625-D3-B.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN |
| N67282 | SPB540-0.625-D6-B.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | |
| N67352 | SPB540-0.625-D6-B.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | TiCN |
| N54240 | SPB540-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N88695 | SPB540-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiCN |
| N67283 | SPB540-0.750-D3-B.3-Z4 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 4 | |
| N67353 | SPB540-0.750-D3-B.3-Z4 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 4 | TiCN |
| N54280 | SPB540-0.875-D2-B.3-Z4 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 4 | |
| N88696 | SPB540-0.875-D2-B.3-Z4 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 4 | TiCN |
| N54320 | SPB540-1.000-D2-B.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | |
| N88697 | SPB540-1.000-D2-B.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | TiCN |
| N67287 | SPB540-1.000-D3-B.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | |
| N67357 | SPB540-1.000-D3-B.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | TiCN |
| N67288 | SPB540-1.000-D4-B.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | |

**DISCOUNT CODE D40**

# GENERAL PURPOSE- SPB540

M42
8% COBALT

HELIX



BALL END

CENTER CUTTING

- Weldon flat standard
- Designed for profiling and contouring in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N67358 | SPB540-1.000-D4-B.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | TiCN |
| N67290 | SPB540-1.000-D6-B.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | |
| N67360 | SPB540-1.000-D6-B.3-Z4 | 1 | 1 | 6 | 8-1/2 | 4 | TiCN |
| N54407 | SPB540-1.250-D1-B.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N88698 | SPB540-1.250-D1-B.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | TiCN |
| N54487 | SPB540-1.500-P1-B.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | |
| N88699 | SPB540-1.500-P1-B.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | TiCN |
| N67297 | SPB540-2.000-D1-B.7-Z6 | 2 | 2 | 2 | 5-3/4 | 6 | |
| N67367 | SPB540-2.000-D1-B.7-Z6 | 2 | 2 | 2 | 5-3/4 | 6 | TiCN |
| N67299 | SPB540-2.000-D3-B.7-Z6 | 2 | 2 | 4 | 7-3/4 | 6 | |
| N67369 | SPB540-2.000-D3-B.7-Z6 | 2 | 2 | 4 | 7-3/4 | 6 | TiCN |
| N67300 | SPB540-2.000-D4-B.7-Z6 | 2 | 2 | 6 | 9-3/4 | 6 | |
| N67370 | SPB540-2.000-D4-B.7-Z6 | 2 | 2 | 6 | 9-3/4 | 6 | TiCN |
| N67301 | SPB540-2.000-D5-B.7-Z6 | 2 | 2 | 8 | 11-3/4 | 6 | |
| N67371 | SPB540-2.000-D5-B.7-Z6 | 2 | 2 | 8 | 11-3/4 | 6 | TiCN |

# GENERAL PURPOSE- DPC560

M42
8% COBALT

HELIX
30°

SQUARE END

CENTER CUTTING

- Weldon flat standard
- Designed for profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N56041 | DPC560-0.125-XF3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 3-1/16 | 4 | |
| N88715 | DPC560-0.125-XF3-S.3-Z4 | 1/8 | 3/8 | 3/8 | 3-1/16 | 4 | TiCN |
| N56051 | DPC560-0.156-XF3-S.3-Z4 | 5/32 | 3/8 | 7/16 | 3-1/8 | 4 | |
| N88716 | DPC560-0.156-XF3-S.3-Z4 | 5/32 | 3/8 | 7/16 | 3-1/8 | 4 | TiCN |
| N56061 | DPC560-0.188-XF3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 3-1/4 | 4 | |
| N88717 | DPC560-0.188-XF3-S.3-Z4 | 3/16 | 3/8 | 1/2 | 3-1/4 | 4 | TiCN |
| N56071 | DPC560-0.219-XF3-S.3-Z4 | 7/32 | 3/8 | 9/16 | 3-1/4 | 4 | |
| N88718 | DPC560-0.219-XF3-S.3-Z4 | 7/32 | 3/8 | 9/16 | 3-1/4 | 4 | TiCN |
| N56081 | DPC560-0.250-XF3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 3-3/8 | 4 | |
| N88719 | DPC560-0.250-XF3-S.3-Z4 | 1/4 | 3/8 | 5/8 | 3-3/8 | 4 | TiCN |
| N56091 | DPC560-0.281-XF2-S.3-Z4 | 9/32 | 3/8 | 11/16 | 3-3/8 | 4 | |
| N88720 | DPC560-0.281-XF2-S.3-Z4 | 9/32 | 3/8 | 11/16 | 3-3/8 | 4 | TiCN |
| N56101 | DPC560-0.313-XF2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N88721 | DPC560-0.313-XF2-S.3-Z4 | 5/16 | 3/8 | 3/4 | 3-1/2 | 4 | TiCN |
| N56111 | DPC560-0.344-XF2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N88722 | DPC560-0.344-XF2-S.3-Z4 | 11/32 | 3/8 | 3/4 | 3-1/2 | 4 | TiCN |
| N56121 | DPC560-0.375-XD2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 3-1/2 | 4 | |
| N88723 | DPC560-0.375-XD2-S.3-Z4 | 3/8 | 3/8 | 3/4 | 3-1/2 | 4 | TiCN |
| N56142 | DPC560-0.438-XF2-S.3-Z4 | 7/16 | 1/2 | 1 | 4-1/8 | 4 | |
| N88724 | DPC560-0.438-XF2-S.3-Z4 | 7/16 | 1/2 | 1 | 4-1/8 | 4 | TiCN |
| N56162 | DPC560-0.500-XD2-S.3-Z4 | 1/2 | 1/2 | 1 | 4-1/8 | 4 | |
| N88725 | DPC560-0.500-XD2-S.3-Z4 | 1/2 | 1/2 | 1 | 4-1/8 | 4 | TiCN |
| N56203 | DPC560-0.625-XD2-S.3-Z4 | 5/8 | 5/8 | 1-3/8 | 5 | 4 | |
| N88727 | DPC560-0.625-XD2-S.3-Z4 | 5/8 | 5/8 | 1-3/8 | 5 | 4 | TiCN |
| N56244 | DPC560-0.750-XD2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 5-5/8 | 4 | |
| N88728 | DPC560-0.750-XD2-S.3-Z4 | 3/4 | 3/4 | 1-5/8 | 5-5/8 | 4 | TiCN |
| N56285 | DPC560-0.875-XD2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 6-1/8 | 4 | |
| N88729 | DPC560-0.875-XD2-S.3-Z4 | 7/8 | 7/8 | 1-7/8 | 6-1/8 | 4 | TiCN |

# GENERAL PURPOSE- HDP890

M42
8% COBALT

HELIX
30°

SQUARE END

CENTER CUTTING

- Combo shank standard
- Designed for profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N60539 | HDP890-2.000-D3-S.7-Z8 | 2 | 2 | 4 | 7-3/4 | 8 | |
| N60555 | HDP890-2.000-D3-S.7-Z8 | 2 | 2 | 4 | 7-3/4 | 8 | TiCN |
| N60541 | HDP890-2.000-D5-S.7-Z8 | 2 | 2 | 6 | 9-3/4 | 8 | |
| N60557 | HDP890-2.000-D5-S.7-Z8 | 2 | 2 | 6 | 9-3/4 | 8 | TiCN |
| N60542 | HDP890-2.000-D6-S.7-Z8 | 2 | 2 | 8 | 11-3/4 | 8 | |
| N60558 | HDP890-2.000-D6-S.7-Z8 | 2 | 2 | 8 | 11-3/4 | 8 | TiCN |

# GENERAL PURPOSE- SMM845

M42
8% COBALT

HELIX
30°

SQUARE END

CENTER CUTTING

- Metric flute / inch shank
- Weldon flat standard
- Designed for profiling in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N72860 | SMM845-0.079-F5-S.3-Z4 | 2mm | 3/8 | 3/8 | 2-5/16 | 4 | |
| N88948 | SMM845-0.079-F5-S.3-Z4 | 2mm | 3/8 | 3/8 | 2-5/16 | 4 | TiCN |
| N72861 | SMM845-0.118-F3-S.3-Z4 | 3mm | 3/8 | 3/8 | 2-5/16 | 4 | |
| N88949 | SMM845-0.118-F3-S.3-Z4 | 3mm | 3/8 | 3/8 | 2-5/16 | 4 | TiCN |
| N72862 | SMM845-0.157-F3-S.3-Z4 | 4mm | 3/8 | 1/2 | 2-5/16 | 4 | |
| N88950 | SMM845-0.157-F3-S.3-Z4 | 4mm | 3/8 | 1/2 | 2-5/16 | 4 | TiCN |
| N72863 | SMM845-0.197-F3-S.3-Z4 | 5mm | 3/8 | 9/16 | 2-1/2 | 4 | |
| N88951 | SMM845-0.197-F3-S.3-Z4 | 5mm | 3/8 | 9/16 | 2-1/2 | 4 | TiCN |
| N72864 | SMM845-0.236-F3-S.3-Z4 | 6mm | 3/8 | 5/8 | 2-1/2 | 4 | |
| N88952 | SMM845-0.236-F3-S.3-Z4 | 6mm | 3/8 | 5/8 | 2-1/2 | 4 | TiCN |
| N72866 | SMM845-0.315-F2-S.3-Z4 | 8mm | 3/8 | 3/4 | 2-1/2 | 4 | |
| N88954 | SMM845-0.315-F2-S.3-Z4 | 8mm | 3/8 | 3/4 | 2-1/2 | 4 | TiCN |
| N72867 | SMM845-0.394-P3-S.3-Z4 | 10mm | 3/8 | 1 | 2-11/16 | 4 | |
| N88955 | SMM845-0.394-P3-S.3-Z4 | 10mm | 3/8 | 1 | 2-11/16 | 4 | TiCN |
| N72868 | SMM845-0.472-F2-S.3-Z4 | 12mm | 1/2 | 1 | 2-11/16 | 4 | |
| N88956 | SMM845-0.472-F2-S.3-Z4 | 12mm | 1/2 | 1 | 2-11/16 | 4 | TiCN |
| N72869 | SMM845-0.551-P2-S.3-Z4 | 14mm | 1/2 | 1-3/8 | 3-3/8 | 4 | |
| N88957 | SMM845-0.551-P2-S.3-Z4 | 14mm | 1/2 | 1-3/8 | 3-3/8 | 4 | TiCN |
| N72870 | SMM845-0.630-P3-S.3-Z4 | 16mm | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N88958 | SMM845-0.630-P3-S.3-Z4 | 16mm | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN |
| N72871 | SMM845-0.709-P2-S.3-Z4 | 18mm | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N88959 | SMM845-0.709-P2-S.3-Z4 | 18mm | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN |
| N72872 | SMM845-0.787-P2-S.3-Z4 | 20mm | 3/4 | 1-7/8 | 4-1/8 | 4 | |
| N88960 | SMM845-0.787-P2-S.3-Z4 | 20mm | 3/4 | 1-7/8 | 4-1/8 | 4 | TiCN |

DISCOUNT CODE D40

# GENERAL PURPOSE- RTM713

M42
8% COBALT

HELIX
36°

CHAMFER
45°

CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N73081 | RTM713-0.250-F3-C020.3-Z3 | 1/4 | 3/8 | 5/8 | 2-1/2 | 3 | | 0.020 |
| N89019 | RTM713-0.250-F3-C020.3-Z3 | 1/4 | 3/8 | 5/8 | 2-1/2 | 3 | TiCN | 0.020 |
| N73121 | RTM713-0.375-D2-C020.3-Z3 | 3/8 | 3/8 | 7/8 | 2-3/4 | 3 | | 0.020 |
| N89022 | RTM713-0.375-D2-C020.3-Z3 | 3/8 | 3/8 | 7/8 | 2-3/4 | 3 | TiCN | 0.020 |
| N73162 | RTM713-0.500-D2-C025.3-Z3 | 1/2 | 1/2 | 1 | 3-1/16 | 3 | | 0.025 |
| N89025 | RTM713-0.500-D2-C025.3-Z3 | 1/2 | 1/2 | 1 | 3-1/16 | 3 | TiCN | 0.025 |
| N73203 | RTM713-0.625-D2-C025.3-Z3 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 3 | | 0.025 |
| N89027 | RTM713-0.625-D2-C025.3-Z3 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 3 | TiCN | 0.025 |
| N73249 | RTM713-0.750-D1-C025.3-Z3 | 3/4 | 3/4 | 3/4 | 3 | 3 | | 0.025 |
| N89030 | RTM713-0.750-D1-C025.3-Z3 | 3/4 | 3/4 | 3/4 | 3 | 3 | TiCN | 0.025 |
| N73244 | RTM713-0.750-D2-C025.3-Z3 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 3 | | 0.025 |
| N89029 | RTM713-0.750-D2-C025.3-Z3 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 3 | TiCN | 0.025 |
| N73327 | RTM713-1.000-P1-C030.3-Z3 | 1 | 3/4 | 1 | 3-1/4 | 3 | | 0.030 |
| N89035 | RTM713-1.000-P1-C030.3-Z3 | 1 | 3/4 | 1 | 3-1/4 | 3 | TiCN | 0.030 |
| N73326 | RTM713-1.000-D2-C030.3-Z3 | 1 | 1 | 1-3/4 | 4-5/8 | 3 | | 0.030 |
| N89034 | RTM713-1.000-D2-C030.3-Z3 | 1 | 1 | 1-3/4 | 4-5/8 | 3 | TiCN | 0.030 |

# GENERAL PURPOSE- RHC752

HSCO
8% COBALT

HELIX
36°

CHAMFER
45°

CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N75215 | RHC752-0.250-F3-C020.3-Z3 | 1/4 | 3/8 | 5/8 | 2-7/16 | 3 | | 0.020 |
| N79460 | RHC752-0.250-F3-C020.3-Z3 | 1/4 | 3/8 | 5/8 | 2-7/16 | 3 | TiCN | 0.020 |
| N75201 | RHC752-0.375-D2-C025.3-Z3 | 3/8 | 3/8 | 3/4 | 2-1/2 | 3 | | 0.025 |
| N69360 | RHC752-0.375-D2-C025.3-Z3 | 3/8 | 3/8 | 3/4 | 2-1/2 | 3 | TiCN | 0.025 |
| N75203 | RHC752-0.375-D4-C025.3-Z3 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 3 | | 0.025 |
| N79464 | RHC752-0.375-D4-C025.3-Z3 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 3 | TiCN | 0.025 |
| N75313 | RHC752-0.500-D1-C030.3-Z3 | 1/2 | 1/2 | 1 | 3 | 3 | | 0.030 |
| N79466 | RHC752-0.500-D1-C030.3-Z3 | 1/2 | 1/2 | 1 | 3 | 3 | TiCN | 0.030 |
| N75205 | RHC752-0.500-D2-C030.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 3 | | 0.030 |
| N69361 | RHC752-0.500-D2-C030.3-Z3 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 3 | TiCN | 0.030 |
| N75209 | RHC752-0.500-D4-C030.3-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | | 0.030 |
| N69362 | RHC752-0.500-D4-C030.3-Z3 | 1/2 | 1/2 | 2 | 4 | 3 | TiCN | 0.030 |
| N75213 | RHC752-0.625-D3-C040.3-Z3 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 3 | | 0.040 |
| N69363 | RHC752-0.625-D3-C040.3-Z3 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 3 | TiCN | 0.040 |
| N75217 | RHC752-0.625-D5-C040.3-Z3 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 3 | | 0.040 |
| N69364 | RHC752-0.625-D5-C040.3-Z3 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 3 | TiCN | 0.040 |
| N75233 | RHC752-0.750-D1-C040.3-Z3 | 3/4 | 3/4 | 3/4 | 3 | 3 | | 0.040 |
| N69368 | RHC752-0.750-D1-C040.3-Z3 | 3/4 | 3/4 | 3/4 | 3 | 3 | TiCN | 0.040 |
| N75229 | RHC752-0.750-D3-C040.3-Z3 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 3 | | 0.040 |
| N69367 | RHC752-0.750-D3-C040.3-Z3 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 3 | TiCN | 0.040 |
| N75221 | RHC752-0.750-D4-C040.3-Z3 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 3 | | 0.040 |
| N69365 | RHC752-0.750-D4-C040.3-Z3 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 3 | TiCN | 0.040 |
| N75225 | RHC752-0.750-D5-C040.3-Z3 | 3/4 | 3/4 | 2 | 4-1/4 | 3 | | 0.040 |
| N69366 | RHC752-0.750-D5-C040.3-Z3 | 3/4 | 3/4 | 2 | 4-1/4 | 3 | TiCN | 0.040 |
| N75223 | RHC752-0.750-D6-C040.3-Z3 | 3/4 | 3/4 | 2-1/2 | 4-3/4 | 3 | | 0.040 |
| N79478 | RHC752-0.750-D6-C040.3-Z3 | 3/4 | 3/4 | 2-1/2 | 4-3/4 | 3 | TiCN | 0.040 |
| N75235 | RHC752-0.750-D7-C040.3-Z3 | 3/4 | 3/4 | 3 | 5-1/4 | 3 | | 0.040 |
| N79479 | RHC752-0.750-D7-C040.3-Z3 | 3/4 | 3/4 | 3 | 5-1/4 | 3 | TiCN | 0.040 |
| N75257 | RHC752-1.000-P1-C040.3-Z3 | 1 | 3/4 | 3/4 | 3 | 3 | | 0.040 |
| N69374 | RHC752-1.000-P1-C040.3-Z3 | 1 | 3/4 | 3/4 | 3 | 3 | TiCN | 0.040 |
| N75253 | RHC752-1.000-P3-C040.3-Z3 | 1 | 3/4 | 1-1/2 | 3-3/4 | 3 | | 0.040 |
| N69373 | RHC752-1.000-P3-C040.3-Z3 | 1 | 3/4 | 1-1/2 | 3-3/4 | 3 | TiCN | 0.040 |
| N75245 | RHC752-1.000-D3-C040.3-Z3 | 1 | 1 | 2 | 4-1/2 | 3 | | 0.040 |
| N69371 | RHC752-1.000-D3-C040.3-Z3 | 1 | 1 | 2 | 4-1/2 | 3 | TiCN | 0.040 |
| N75249 | RHC752-1.000-D4-C040.3-Z3 | 1 | 1 | 3 | 5-1/2 | 3 | | 0.040 |

DISCOUNT CODE D41

# GENERAL PURPOSE- RHC752

HSCO
8% COBALT

HELIX
36°

CHAMFER
45°

CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N69372 | RHC752-1.000-D4-C040.3-Z3 | 1 | 1 | 3 | 5-1/2 | 3 | TiCN | 0.040 |
| N75351 | RHC752-1.000-D5-C040.3-Z3 | 1 | 1 | 4 | 6-1/2 | 3 | | 0.040 |
| N79493 | RHC752-1.000-D5-C040.3-Z3 | 1 | 1 | 4 | 6-1/2 | 3 | TiCN | 0.040 |
| N75261 | RHC752-1.250-D2-C045.3-Z3 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 3 | | 0.045 |
| N69375 | RHC752-1.250-D2-C045.3-Z3 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 3 | TiCN | 0.045 |
| N75265 | RHC752-1.250-D3-C045.3-Z3 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 3 | | 0.045 |
| N69376 | RHC752-1.250-D3-C045.3-Z3 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 3 | TiCN | 0.045 |
| N75283 | RHC752-1.500-P7-C045.3-Z3 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 3 | | 0.045 |
| N79508 | RHC752-1.500-P7-C045.3-Z3 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 3 | TiCN | 0.045 |

# GENERAL PURPOSE- RHLC754

HSCO
8% COBALT

HELIX
36°

CHAMFER
45°

CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in aluminum and non-ferrous materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH | CHAMFER |
|---|---|---|---|---|---|---|---|---|---|
| N75421 | RHLC754-1.000-E2-C040.3-Z3 | 1 | 1 | 2-1/2 | 6-1/2 | 3 | | 4 | 0.040 |
| N89112 | RHLC754-1.000-E2-C040.3-Z3 | 1 | 1 | 2-1/2 | 6-1/2 | 3 | TiCN | 4 | 0.040 |
| N75425 | RHLC754-1.000-E3-C040.3-Z3 | 1 | 1 | 2-1/2 | 8-1/2 | 3 | | 6 | 0.040 |
| N89113 | RHLC754-1.000-E3-C040.3-Z3 | 1 | 1 | 2-1/2 | 8-1/2 | 3 | TiCN | 6 | 0.040 |
| N75437 | RHLC754-1.250-E2-C045.3-Z3 | 1-1/4 | 1-1/4 | 2-1/2 | 6-1/2 | 3 | | 4 | 0.045 |
| N89114 | RHLC754-1.250-E2-C045.3-Z3 | 1-1/4 | 1-1/4 | 2-1/2 | 6-1/2 | 3 | TiCN | 4 | 0.045 |
| N75441 | RHLC754-1.250-E3-C045.3-Z3 | 1-1/4 | 1-1/4 | 2-1/2 | 8-1/2 | 3 | | 6 | 0.045 |
| N89115 | RHLC754-1.250-E3-C045.3-Z3 | 1-1/4 | 1-1/4 | 2-1/2 | 8-1/2 | 3 | TiCN | 6 | 0.045 |
| N75459 | RHLC754-1.500-P6-C045.3-Z3 | 1-1/2 | 1-1/4 | 2-1/2 | 10-1/2 | 3 | | 6 | 0.045 |
| N89118 | RHLC754-1.500-P6-C045.3-Z3 | 1-1/2 | 1-1/4 | 2-1/2 | 10-1/2 | 3 | TiCN | 6 | 0.045 |

# GENERAL PURPOSE- RTM447

M42
8% COBALT

HELIX
36°

CHAMFER
45°

CENTER CUTTING

FINE PITCH

- Weldon flat standard
- Designed for profiling and slotting in steel, stainless steel and high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N44701 | RTM447-0.250-F1-C020.3-Z3 | 1/4 | 3/8 | 1/4 | 2-1/8 | 3 | | 0.020 |
| N88456 | RTM447-0.250-F1-C020.3-Z3 | 1/4 | 3/8 | 1/4 | 2-1/8 | 3 | TiCN | 0.020 |
| N44703 | RTM447-0.250-F3-C020.3-Z3 | 1/4 | 3/8 | 5/8 | 2-1/2 | 3 | | 0.020 |
| N88457 | RTM447-0.250-F3-C020.3-Z3 | 1/4 | 3/8 | 5/8 | 2-1/2 | 3 | TiCN | 0.020 |
| N44705 | RTM447-0.375-D1-C020.3-Z3 | 3/8 | 3/8 | 3/8 | 2-1/4 | 3 | | 0.020 |
| N88458 | RTM447-0.375-D1-C020.3-Z3 | 3/8 | 3/8 | 3/8 | 2-1/4 | 3 | TiCN | 0.020 |
| N44707 | RTM447-0.375-D2-C020.3-Z3 | 3/8 | 3/8 | 7/8 | 2-3/4 | 3 | | 0.020 |
| N88459 | RTM447-0.375-D2-C020.3-Z3 | 3/8 | 3/8 | 7/8 | 2-3/4 | 3 | TiCN | 0.020 |
| N44709 | RTM447-0.500-D1-C025.3-Z3 | 1/2 | 1/2 | 1/2 | 2-9/16 | 3 | | 0.025 |
| N88460 | RTM447-0.500-D1-C025.3-Z3 | 1/2 | 1/2 | 1/2 | 2-9/16 | 3 | TiCN | 0.025 |
| N44711 | RTM447-0.500-D2-C025.3-Z3 | 1/2 | 1/2 | 1 | 3-1/16 | 3 | | 0.025 |
| N88461 | RTM447-0.500-D2-C025.3-Z3 | 1/2 | 1/2 | 1 | 3-1/16 | 3 | TiCN | 0.025 |
| N44713 | RTM447-0.625-D1-C025.3-Z3 | 5/8 | 5/8 | 5/8 | 2-7/8 | 3 | | 0.025 |
| N88462 | RTM447-0.625-D1-C025.3-Z3 | 5/8 | 5/8 | 5/8 | 2-7/8 | 3 | TiCN | 0.025 |
| N44715 | RTM447-0.625-D2-C025.3-Z3 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 3 | | 0.025 |
| N88463 | RTM447-0.625-D2-C025.3-Z3 | 5/8 | 5/8 | 1-1/4 | 3-1/2 | 3 | TiCN | 0.025 |
| N44719 | RTM447-0.750-D2-C025.3-Z3 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 3 | | 0.025 |
| N88465 | RTM447-0.750-D2-C025.3-Z3 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 3 | TiCN | 0.025 |
| N44731 | RTM447-1.000-D2-C030.3-Z3 | 1 | 1 | 1-3/4 | 4-5/8 | 3 | | 0.030 |
| N88471 | RTM447-1.000-D2-C030.3-Z3 | 1 | 1 | 1-3/4 | 4-5/8 | 3 | TiCN | 0.030 |

# GENERAL PURPOSE- REM710

M42
8% COBALT

HELIX
30°

CHAMFER
45°

NON CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N71061 | REM710-0.188-F3-C020.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | | 0.020 |
| N69290 | REM710-0.188-F3-C020.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | TiCN | 0.020 |
| N71081 | REM710-0.250-F2-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | | 0.020 |
| N71084 | REM710-0.250-F2-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiCN | 0.020 |
| N71082 | REM710-0.250-F4-C020.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | | 0.020 |
| N69291 | REM710-0.250-F4-C020.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | TiCN | 0.020 |
| N71101 | REM710-0.313-F2-C025.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N71104 | REM710-0.313-F2-C025.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN | 0.025 |
| N71102 | REM710-0.313-F4-C025.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | | 0.025 |
| N69293 | REM710-0.313-F4-C025.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | TiCN | 0.025 |
| N71121 | REM710-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N71124 | REM710-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN | 0.025 |
| N71126 | REM710-0.375-D3-C025.3-Z4 | 3/8 | 3/8 | 1-3/8 | 3-1/8 | 4 | | 0.025 |
| N70940 | REM710-0.375-D3-C025.3-Z4 | 3/8 | 3/8 | 1-3/8 | 3-1/8 | 4 | TiCN | 0.025 |
| N71122 | REM710-0.375-D4-C025.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | | 0.025 |
| N69294 | REM710-0.375-D4-C025.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiCN | 0.025 |
| N71141 | REM710-0.438-P2-C025.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | | 0.025 |
| N69295 | REM710-0.438-P2-C025.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | TiCN | 0.025 |
| N71161 | REM710-0.500-D1-C025.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | | 0.025 |
| N79420 | REM710-0.500-D1-C025.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiCN | 0.025 |
| N71162 | REM710-0.500-D2-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | | 0.025 |
| N71165 | REM710-0.500-D2-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiCN | 0.025 |
| N72162 | REM710-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-5/8 | 3-5/8 | 4 | | 0.025 |
| N79421 | REM710-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-5/8 | 3-5/8 | 4 | TiCN | 0.025 |
| N71163 | REM710-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | | 0.025 |
| N69296 | REM710-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiCN | 0.025 |
| N72163 | REM710-0.500-D5-C025.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | | 0.025 |
| N79422 | REM710-0.500-D5-C025.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiCN | 0.025 |
| N72167 | REM710-0.500-D6-C025.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | | 0.025 |
| N79423 | REM710-0.500-D6-C025.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | TiCN | 0.025 |
| N71182 | REM710-0.563-P2-C025.3-Z4 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 4 | | 0.025 |
| N69297 | REM710-0.563-P2-C025.3-Z4 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 4 | TiCN | 0.025 |
| N71206 | REM710-0.625-D1-C030.3-Z4 | 5/8 | 5/8 | 3/4 | 2-7/8 | 4 | | 0.030 |
| N79424 | REM710-0.625-D1-C030.3-Z4 | 5/8 | 5/8 | 3/4 | 2-7/8 | 4 | TiCN | 0.030 |
| N71202 | REM710-0.625-D2-C030.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-3/8 | 4 | | 0.030 |

DISCOUNT CODE D41

# GENERAL PURPOSE- REM710

M42
8% COBALT

HELIX
30°

CHAMFER
45°

NON CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N79425 | REM710-0.625-D2-C030.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-3/8 | 4 | TiCN | 0.030 |
| N71203 | REM710-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | | 0.030 |
| N71208 | REM710-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN | 0.030 |
| N71204 | REM710-0.625-D5-C030.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | | 0.030 |
| N69298 | REM710-0.625-D5-C030.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | TiCN | 0.030 |
| N72204 | REM710-0.625-D6-C030.3-Z4 | 5/8 | 5/8 | 3-1/8 | 5-1/4 | 4 | | 0.030 |
| N79427 | REM710-0.625-D6-C030.3-Z4 | 5/8 | 5/8 | 3-1/8 | 5-1/4 | 4 | TiCN | 0.030 |
| N71243 | REM710-0.750-P2-C030.3-Z4 | 3/4 | 5/8 | 1-5/8 | 3-3/4 | 4 | | 0.030 |
| N69301 | REM710-0.750-P2-C030.3-Z4 | 3/4 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN | 0.030 |
| N72243 | REM710-0.750-D1-C030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | | 0.030 |
| N69300 | REM710-0.750-D1-C030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | TiCN | 0.030 |
| N71241 | REM710-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-1/4 | 3-1/2 | 4 | | 0.030 |
| N79429 | REM710-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-1/4 | 3-1/2 | 4 | TiCN | 0.030 |
| N72241 | REM710-0.750-D3-C030.3-Z4 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 4 | | 0.030 |
| N79430 | REM710-0.750-D3-C030.3-Z4 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 4 | TiCN | 0.030 |
| N71244 | REM710-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | | 0.030 |
| N71245 | REM710-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiCN | 0.030 |
| N71247 | REM710-0.750-D5-C030.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | | 0.030 |
| N79431 | REM710-0.750-D5-C030.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | TiCN | 0.030 |
| N72245 | REM710-0.750-D6-C030.3-Z4 | 3/4 | 3/4 | 2-1/2 | 4-3/4 | 4 | | 0.030 |
| N79432 | REM710-0.750-D6-C030.3-Z4 | 3/4 | 3/4 | 2-1/2 | 4-3/4 | 4 | TiCN | 0.030 |
| N72244 | REM710-0.750-D7-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | | 0.030 |
| N69299 | REM710-0.750-D7-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiCN | 0.030 |
| N72248 | REM710-0.750-D8-C030.3-Z4 | 3/4 | 3/4 | 4-1/8 | 6-3/8 | 4 | | 0.030 |
| N79433 | REM710-0.750-D8-C030.3-Z4 | 3/4 | 3/4 | 4-1/8 | 6-3/8 | 4 | TiCN | 0.030 |
| N72284 | REM710-0.875-P3-C030.3-Z5 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 5 | | 0.030 |
| N69302 | REM710-0.875-P3-C030.3-Z5 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 5 | TiCN | 0.030 |
| N71283 | REM710-0.875-P4-C030.3-Z5 | 7/8 | 3/4 | 3-1/2 | 5-3/4 | 5 | | 0.030 |
| N69303 | REM710-0.875-P4-C030.3-Z5 | 7/8 | 3/4 | 3-1/2 | 5-3/4 | 5 | TiCN | 0.030 |
| N71284 | REM710-0.875-D2-C030.3-Z5 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 5 | | 0.030 |
| N69304 | REM710-0.875-D2-C030.3-Z5 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 5 | TiCN | 0.030 |
| N71285 | REM710-0.875-D4-C030.3-Z5 | 7/8 | 7/8 | 3-1/2 | 5-3/4 | 5 | | 0.030 |
| N69305 | REM710-0.875-D4-C030.3-Z5 | 7/8 | 7/8 | 3-1/2 | 5-3/4 | 5 | TiCN | 0.030 |
| N71324 | REM710-1.000-P1-C030.3-Z5 | 1 | 3/4 | 3/4 | 3 | 5 | | 0.030 |
| N69310 | REM710-1.000-P1-C030.3-Z5 | 1 | 3/4 | 3/4 | 3 | 5 | TiCN | 0.030 |

**DISCOUNT CODE D41**

# GENERAL PURPOSE- REM710

M42
8% COBALT

HELIX
30°

CHAMFER
45°

NON CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N72324 | REM710-1.000-P3-C030.3-Z5 | 1 | 3/4 | 1-1/2 | 3-3/4 | 5 | | 0.030 |
| N69309 | REM710-1.000-P3-C030.3-Z5 | 1 | 3/4 | 1-1/2 | 3-3/4 | 5 | TiCN | 0.030 |
| N71330 | REM710-1.000-P4-C030.3-Z5 | 1 | 3/4 | 2 | 4-1/4 | 5 | | 0.030 |
| N79439 | REM710-1.000-P4-C030.3-Z5 | 1 | 3/4 | 2 | 4-1/4 | 5 | TiCN | 0.030 |
| N72318 | REM710-1.000-D1-C030.3-Z5 | 1 | 1 | 1-1/8 | 3-5/8 | 5 | | 0.030 |
| N79442 | REM710-1.000-D1-C030.3-Z5 | 1 | 1 | 1-1/8 | 3-5/8 | 5 | TiCN | 0.030 |
| N71326 | REM710-1.000-D3-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | | 0.030 |
| N71329 | REM710-1.000-D3-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | TiCN | 0.030 |
| N71327 | REM710-1.000-D4-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | | 0.030 |
| N69306 | REM710-1.000-D4-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | TiCN | 0.030 |
| N72326 | REM710-1.000-D5-C030.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | | 0.030 |
| N69307 | REM710-1.000-D5-C030.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | TiCN | 0.030 |
| N72327 | REM710-1.000-D6-C030.3-Z5 | 1 | 1 | 6 | 8-1/2 | 5 | | 0.030 |
| N69308 | REM710-1.000-D6-C030.3-Z5 | 1 | 1 | 6 | 8-1/2 | 5 | TiCN | 0.030 |
| N71366 | REM710-1.125-P3-C040.3-Z6 | 1-1/8 | 1 | 2 | 4-1/2 | 6 | | 0.040 |
| N69311 | REM710-1.125-P3-C040.3-Z6 | 1-1/8 | 1 | 2 | 4-1/2 | 6 | TiCN | 0.040 |
| N71367 | REM710-1.125-P4-C040.3-Z6 | 1-1/8 | 1 | 3-1/2 | 6 | 6 | | 0.040 |
| N79446 | REM710-1.125-P4-C040.3-Z6 | 1-1/8 | 1 | 3-1/2 | 6 | 6 | TiCN | 0.040 |
| N71404 | REM710-1.250-P1-C040.3-Z6 | 1-1/4 | 3/4 | 3/4 | 3 | 6 | | 0.040 |
| N69317 | REM710-1.250-P1-C040.3-Z6 | 1-1/4 | 3/4 | 3/4 | 3 | 6 | TiCN | 0.040 |
| N72404 | REM710-1.250-P3-C040.3-Z6 | 1-1/4 | 3/4 | 1-1/2 | 3-3/4 | 6 | | 0.040 |
| N69316 | REM710-1.250-P3-C040.3-Z6 | 1-1/4 | 3/4 | 1-1/2 | 3-3/4 | 6 | TiCN | 0.040 |
| N71406 | REM710-1.250-P4-C040.3-Z6 | 1-1/4 | 3/4 | 2 | 4-1/4 | 6 | | 0.040 |
| N79448 | REM710-1.250-P4-C040.3-Z6 | 1-1/4 | 3/4 | 2 | 4-1/4 | 6 | TiCN | 0.040 |
| N71407 | REM710-1.250-D2-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N69312 | REM710-1.250-D2-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | TiCN | 0.040 |
| N71408 | REM710-1.250-D3-C040.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | | 0.040 |
| N69313 | REM710-1.250-D3-C040.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | TiCN | 0.040 |
| N72407 | REM710-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.040 |
| N69314 | REM710-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | TiCN | 0.040 |
| N72408 | REM710-1.250-D5-C040.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | | 0.040 |
| N69315 | REM710-1.250-D5-C040.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | TiCN | 0.040 |
| N72484 | REM710-1.500-P3-C040.3-Z6 | 1-1/2 | 3/4 | 1-1/2 | 3-3/4 | 6 | | 0.040 |
| N69324 | REM710-1.500-P3-C040.3-Z6 | 1-1/2 | 3/4 | 1-1/2 | 3-3/4 | 6 | TiCN | 0.040 |
| N72485 | REM710-1.500-P4-C040.3-Z6 | 1-1/2 | 3/4 | 2 | 4-1/4 | 6 | | 0.040 |

**DISCOUNT CODE D41**

# GENERAL PURPOSE- REM710

M42
8% COBALT

HELIX
30°

CHAMFER
45°

NON CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N79453 | REM710-1.500-P4-C040.3-Z6 | 1-1/2 | 3/4 | 2 | 4-1/4 | 6 | TiCN | 0.040 |
| N71487 | REM710-1.500-P5-C040.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N69318 | REM710-1.500-P5-C040.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | TiCN | 0.040 |
| N71488 | REM710-1.500-P6-C040.3-Z6 | 1-1/2 | 1-1/4 | 3 | 5-1/2 | 6 | | 0.040 |
| N69319 | REM710-1.500-P6-C040.3-Z6 | 1-1/2 | 1-1/4 | 3 | 5-1/2 | 6 | TiCN | 0.040 |
| N72487 | REM710-1.500-P7-C040.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.040 |
| N69320 | REM710-1.500-P7-C040.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | TiCN | 0.040 |
| N72488 | REM710-1.500-P8-C040.3-Z6 | 1-1/2 | 1-1/4 | 5 | 7-1/2 | 6 | | 0.040 |
| N69321 | REM710-1.500-P8-C040.3-Z6 | 1-1/2 | 1-1/4 | 5 | 7-1/2 | 6 | TiCN | 0.040 |
| N71489 | REM710-1.500-P9-C040.3-Z6 | 1-1/2 | 1-1/4 | 6 | 8-1/2 | 6 | | 0.040 |
| N69322 | REM710-1.500-P9-C040.3-Z6 | 1-1/2 | 1-1/4 | 6 | 8-1/2 | 6 | TiCN | 0.040 |
| N72489 | REM710-1.500-P10-C040.3-Z6 | 1-1/2 | 1-1/4 | 8 | 10-1/2 | 6 | | 0.040 |
| N69323 | REM710-1.500-P10-C040.3-Z6 | 1-1/2 | 1-1/4 | 8 | 10-1/2 | 6 | TiCN | 0.040 |
| N72574 | REM710-1.750-P5-C040.3-Z6 | 1-3/4 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.040 |
| N69328 | REM710-1.750-P5-C040.3-Z6 | 1-3/4 | 1-1/4 | 4 | 6-1/2 | 6 | TiCN | 0.040 |
| N71644 | REM710-2.000-P1-C040.3-Z8 | 2 | 3/4 | 3/4 | 3 | 8 | | 0.040 |
| N69330 | REM710-2.000-P1-C040.3-Z8 | 2 | 3/4 | 3/4 | 3 | 8 | TiCN | 0.040 |
| N71640 | REM710-2.000-P2-C040.3-Z8 | 2 | 3/4 | 1-1/8 | 3-3/8 | 8 | | 0.040 |
| N79456 | REM710-2.000-P2-C040.3-Z8 | 2 | 3/4 | 1-1/8 | 3-3/8 | 8 | TiCN | 0.040 |
| N71645 | REM710-2.000-P4-C040.3-Z8 | 2 | 1-1/4 | 2 | 4-1/2 | 8 | | 0.040 |
| N69331 | REM710-2.000-P4-C040.3-Z8 | 2 | 1-1/4 | 2 | 4-1/2 | 8 | TiCN | 0.040 |
| N71648 | REM710-2.000-P5-C040.3-Z8 | 2 | 1-1/4 | 4 | 6-1/2 | 8 | | 0.040 |
| N69332 | REM710-2.000-P5-C040.3-Z8 | 2 | 1-1/4 | 4 | 6-1/2 | 8 | TiCN | 0.040 |
| N71343 | REM710-2.000-D3-C040.7-Z8 | 2 | 2 | 4 | 7-3/4 | 8 | | 0.040 |
| N69335 | REM710-2.000-D3-C040.7-Z8 | 2 | 2 | 4 | 7-3/4 | 8 | TiCN | 0.040 |
| N71353 | REM710-2.000-D4-C040.7-Z8 | 2 | 2 | 5 | 8-3/4 | 8 | | 0.040 |
| N69336 | REM710-2.000-D4-C040.7-Z8 | 2 | 2 | 5 | 8-3/4 | 8 | TiCN | 0.040 |
| N71363 | REM710-2.000-D5-C040.7-Z8 | 2 | 2 | 6 | 9-3/4 | 8 | | 0.040 |
| N69337 | REM710-2.000-D5-C040.7-Z8 | 2 | 2 | 6 | 9-3/4 | 8 | TiCN | 0.040 |
| N71383 | REM710-2.000-D7-C040.7-Z8 | 2 | 2 | 8 | 11-3/4 | 8 | | 0.040 |
| N69339 | REM710-2.000-D7-C040.7-Z8 | 2 | 2 | 8 | 11-3/4 | 8 | TiCN | 0.040 |

DISCOUNT CODE D41

# GENERAL PURPOSE- REC700

M42
8% COBALT

HELIX
30°

CHAMFER
45°

CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N70013 | REC700-0.188-F3-C020.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | | 0.020 |
| N88861 | REC700-0.188-F3-C020.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | TiCN | 0.020 |
| N70210 | REC700-0.250-F2-C020.3-Z4 | 1/4 | 3/8 | 3/8 | 2-3/16 | 4 | | 0.020 |
| N70212 | REC700-0.250-F2-C020.3-Z4 | 1/4 | 3/8 | 3/8 | 2-3/16 | 4 | TiCN | 0.020 |
| N70015 | REC700-0.250-F3-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | | 0.020 |
| N88862 | REC700-0.250-F3-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiCN | 0.020 |
| N70017 | REC700-0.250-F5-C020.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | | 0.020 |
| N88863 | REC700-0.250-F5-C020.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | TiCN | 0.020 |
| N70019 | REC700-0.313-F2-C025.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N88864 | REC700-0.313-F2-C025.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN | 0.025 |
| N70023 | REC700-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N88866 | REC700-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN | 0.025 |
| N70025 | REC700-0.375-D4-C025.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | | 0.025 |
| N88867 | REC700-0.375-D4-C025.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiCN | 0.025 |
| N70027 | REC700-0.438-P2-C025.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | | 0.025 |
| N88868 | REC700-0.438-P2-C025.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | TiCN | 0.025 |
| N70216 | REC700-0.500-D1-C025.3-Z4 | 1/2 | 1/2 | 5/8 | 2-5/8 | 4 | | 0.025 |
| N70218 | REC700-0.500-D1-C025.3-Z4 | 1/2 | 1/2 | 5/8 | 2-5/8 | 4 | TiCN | 0.025 |
| N70129 | REC700-0.500-D2-C025.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | | 0.025 |
| N88869 | REC700-0.500-D2-C025.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiCN | 0.025 |
| N70031 | REC700-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | | 0.025 |
| N88870 | REC700-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiCN | 0.025 |
| N70033 | REC700-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 1-5/8 | 3-5/8 | 4 | | 0.025 |
| N79526 | REC700-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 1-5/8 | 3-5/8 | 4 | TiCN | 0.025 |
| N70035 | REC700-0.500-D5-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | | 0.025 |
| N88871 | REC700-0.500-D5-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiCN | 0.025 |
| N70137 | REC700-0.500-D6-C025.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | | 0.025 |
| N79527 | REC700-0.500-D6-C025.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiCN | 0.025 |
| N70139 | REC700-0.500-D7-C025.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | | 0.025 |
| N79528 | REC700-0.500-D7-C025.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | TiCN | 0.025 |
| N70037 | REC700-0.563-P2-C025.3-Z4 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 4 | | 0.025 |
| N88872 | REC700-0.563-P2-C025.3-Z4 | 9/16 | 1/2 | 1-3/8 | 3-3/8 | 4 | TiCN | 0.025 |
| N70029 | REC700-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-3/8 | 4 | | 0.030 |
| N79530 | REC700-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-3/8 | 4 | TiCN | 0.030 |
| N70039 | REC700-0.625-D4-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | | 0.030 |
| N88873 | REC700-0.625-D4-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN | 0.030 |
| N70043 | REC700-0.625-D6-C030.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | | 0.030 |

**DISCOUNT CODE D41**

# GENERAL PURPOSE- REC700

M42
8% COBALT

HELIX
30°

CHAMFER
45°

CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N88874 | REC700-0.625-D6-C030.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | TiCN | 0.030 |
| N70045 | REC700-0.625-D7-C030.3-Z4 | 5/8 | 5/8 | 3-1/8 | 5-1/4 | 4 | | 0.030 |
| N79532 | REC700-0.625-D7-C030.3-Z4 | 5/8 | 5/8 | 3-1/8 | 5-1/4 | 4 | TiCN | 0.030 |
| N70053 | REC700-0.750-P2-C030.3-Z4 | 3/4 | 5/8 | 1-5/8 | 3-3/4 | 4 | | 0.030 |
| N88878 | REC700-0.750-P2-C030.3-Z4 | 3/4 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN | 0.030 |
| N70049 | REC700-0.750-D1-C030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | | 0.030 |
| N88876 | REC700-0.750-D1-C030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | TiCN | 0.030 |
| N70151 | REC700-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-1/4 | 3-1/2 | 4 | | 0.030 |
| N79534 | REC700-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-1/4 | 3-1/2 | 4 | TiCN | 0.030 |
| N70153 | REC700-0.750-D3-C030.3-Z4 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 4 | | 0.030 |
| N79535 | REC700-0.750-D3-C030.3-Z4 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 4 | TiCN | 0.030 |
| N70047 | REC700-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | | 0.030 |
| N88875 | REC700-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiCN | 0.030 |
| N70149 | REC700-0.750-D5-C030.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | | 0.030 |
| N79536 | REC700-0.750-D5-C030.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | TiCN | 0.030 |
| N70155 | REC700-0.750-D6-C030.3-Z4 | 3/4 | 3/4 | 2-1/2 | 4-3/4 | 4 | | 0.030 |
| N79537 | REC700-0.750-D6-C030.3-Z4 | 3/4 | 3/4 | 2-1/2 | 4-3/4 | 4 | TiCN | 0.030 |
| N70051 | REC700-0.750-D7-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | | 0.030 |
| N88877 | REC700-0.750-D7-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiCN | 0.030 |
| N70157 | REC700-0.750-D8-C030.3-Z4 | 3/4 | 3/4 | 4-1/8 | 6-3/8 | 4 | | 0.030 |
| N79538 | REC700-0.750-D8-C030.3-Z4 | 3/4 | 3/4 | 4-1/8 | 6-3/8 | 4 | TiCN | 0.030 |
| N70055 | REC700-0.875-P3-C030.3-Z5 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 5 | | 0.030 |
| N88879 | REC700-0.875-P3-C030.3-Z5 | 7/8 | 3/4 | 1-7/8 | 4-1/8 | 5 | TiCN | 0.030 |
| N70059 | REC700-0.875-P4-C030.3-Z5 | 7/8 | 3/4 | 3-1/2 | 5-3/4 | 5 | | 0.030 |
| N88880 | REC700-0.875-P4-C030.3-Z5 | 7/8 | 3/4 | 3-1/2 | 5-3/4 | 5 | TiCN | 0.030 |
| N70063 | REC700-0.875-D2-C030.3-Z5 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 5 | | 0.030 |
| N88881 | REC700-0.875-D2-C030.3-Z5 | 7/8 | 7/8 | 1-7/8 | 4-1/8 | 5 | TiCN | 0.030 |
| N70079 | REC700-1.000-P3-C030.3-Z5 | 1 | 3/4 | 1-1/2 | 3-3/4 | 5 | | 0.030 |
| N88887 | REC700-1.000-P3-C030.3-Z5 | 1 | 3/4 | 1-1/2 | 3-3/4 | 5 | TiCN | 0.030 |
| N70081 | REC700-1.000-P4-C030.3-Z5 | 1 | 3/4 | 2 | 4-1/4 | 5 | | 0.030 |
| N88888 | REC700-1.000-P4-C030.3-Z5 | 1 | 3/4 | 2 | 4-1/4 | 5 | TiCN | 0.030 |
| N70083 | REC700-1.000-P5-C030.3-Z5 | 1 | 3/4 | 3 | 5-1/4 | 5 | | 0.030 |
| N79545 | REC700-1.000-P5-C030.3-Z5 | 1 | 3/4 | 3 | 5-1/4 | 5 | TiCN | 0.030 |
| N70224 | REC700-1.000-D1-C030.3-Z5 | 1 | 1 | 1 | 3-1/2 | 5 | | 0.030 |
| N70226 | REC700-1.000-D1-C030.3-Z5 | 1 | 1 | 1 | 3-1/2 | 5 | TiCN | 0.030 |
| N70167 | REC700-1.000-D2-C030.3-Z5 | 1 | 1 | 1-1/8 | 3-5/8 | 5 | | 0.030 |
| N79547 | REC700-1.000-D2-C030.3-Z5 | 1 | 1 | 1-1/8 | 3-5/8 | 5 | TiCN | 0.030 |

**DISCOUNT CODE D41**

# GENERAL PURPOSE- REC700

M42
8% COBALT

HELIX
30°

CHAMFER
45°

CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N70067 | REC700-1.000-D4-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | | 0.030 |
| N88883 | REC700-1.000-D4-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | TiCN | 0.030 |
| N70071 | REC700-1.000-D5-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | | 0.030 |
| N88884 | REC700-1.000-D5-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | TiCN | 0.030 |
| N70075 | REC700-1.000-D6-C030.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | | 0.030 |
| N88885 | REC700-1.000-D6-C030.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | TiCN | 0.030 |
| N70077 | REC700-1.000-D7-C030.3-Z5 | 1 | 1 | 6 | 8-1/2 | 5 | | 0.030 |
| N88886 | REC700-1.000-D7-C030.3-Z5 | 1 | 1 | 6 | 8-1/2 | 5 | TiCN | 0.030 |
| N70087 | REC700-1.250-D3-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N88889 | REC700-1.250-D3-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | TiCN | 0.040 |
| N70089 | REC700-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | | 0.040 |
| N79558 | REC700-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | TiCN | 0.040 |
| N70091 | REC700-1.250-D5-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.040 |
| N88890 | REC700-1.250-D5-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | TiCN | 0.040 |
| N70093 | REC700-1.250-D6-C040.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | | 0.040 |
| N79559 | REC700-1.250-D6-C040.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | TiCN | 0.040 |
| N70099 | REC700-1.500-P5-C040.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N88891 | REC700-1.500-P5-C040.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | TiCN | 0.040 |
| N70101 | REC700-1.500-P6-C040.3-Z6 | 1-1/2 | 1-1/4 | 3 | 5-1/2 | 6 | | 0.040 |
| N79566 | REC700-1.500-P6-C040.3-Z6 | 1-1/2 | 1-1/4 | 3 | 5-1/2 | 6 | TiCN | 0.040 |
| N70103 | REC700-1.500-P7-C040.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.040 |
| N88892 | REC700-1.500-P7-C040.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | TiCN | 0.040 |
| N70135 | REC700-2.000-P5-C040.3-Z8 | 2 | 1-1/4 | 4 | 6-1/2 | 8 | | 0.040 |
| N79577 | REC700-2.000-P5-C040.3-Z8 | 2 | 1-1/4 | 4 | 6-1/2 | 8 | TiCN | 0.040 |
| N70145 | REC700-2.000-D4-C040.7-Z8 | 2 | 2 | 5 | 8-3/4 | 8 | | 0.040 |
| N79580 | REC700-2.000-D4-C040.7-Z8 | 2 | 2 | 5 | 8-3/4 | 8 | TiCN | 0.040 |
| N70119 | REC700-2.000-D5-C040.7-Z8 | 2 | 2 | 6 | 9-3/4 | 8 | | 0.040 |
| N88895 | REC700-2.000-D5-C040.7-Z8 | 2 | 2 | 6 | 9-3/4 | 8 | TiCN | 0.040 |

# GENERAL PURPOSE- RMB700

M42
8% COBALT

HELIX
30°

BALL END

CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling, slotting and contouring in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N70162 | RMB700-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N88897 | RMB700-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiCN |
| N70203 | RMB700-0.625-D3-B.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | |
| N88898 | RMB700-0.625-D3-B.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN |
| N70223 | RMB700-0.625-D4-B.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | |
| N79586 | RMB700-0.625-D4-B.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | TiCN |
| N70244 | RMB700-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N88899 | RMB700-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiCN |
| N70326 | RMB700-1.000-D2-B.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | |
| N88900 | RMB700-1.000-D2-B.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | TiCN |

# GENERAL PURPOSE- RXC753

M42
8% COBALT

HELIX
30°

CHAMFER
45°

CENTER CUTTING

COARSE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | REACH | CHAMFER |
|---|---|---|---|---|---|---|---|---|---|
| N75341 | RXC753-1.000-E2-C030.3-Z5 | 1 | 1 | 2-1/2 | 6-1/2 | 5 | | 4 | 0.030 |
| N89100 | RXC753-1.000-E2-C030.3-Z5 | 1 | 1 | 2-1/2 | 6-1/2 | 5 | TiCN | 4 | 0.030 |
| N75345 | RXC753-1.000-E3-C030.3-Z5 | 1 | 1 | 2-1/2 | 8-1/2 | 5 | | 6 | 0.030 |
| N89101 | RXC753-1.000-E3-C030.3-Z5 | 1 | 1 | 2-1/2 | 8-1/2 | 5 | TiCN | 6 | 0.030 |
| N75353 | RXC753-1.250-E3-C040.3-Z6 | 1-1/4 | 1-1/4 | 2-1/2 | 8-1/2 | 6 | | 6 | 0.040 |
| N89103 | RXC753-1.250-E3-C040.3-Z6 | 1-1/4 | 1-1/4 | 2-1/2 | 8-1/2 | 6 | TiCN | 6 | 0.040 |
| N75365 | RXC753-1.500-P4-C040.3-Z6 | 1-1/2 | 1-1/4 | 2-1/2 | 10-1/2 | 6 | | 8 | 0.040 |
| N89106 | RXC753-1.500-P4-C040.3-Z6 | 1-1/2 | 1-1/4 | 2-1/2 | 10-1/2 | 6 | TiCN | 8 | 0.040 |

# EXCEL SERIES- EXR350

PREMIUM PARTICLE METAL
8.5% COBALT

HELIX
35°

CHAMFER
45°

CENTER CUTTING

FINE PITCH

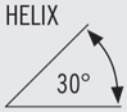
- Weldon flat standard
- Designed for pocketing, profiling and slotting applications

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N53809 | EXR350-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N53911 | EXR350-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiAlN | 0.025 |
| N53810 | EXR350-0.375-D4-C025.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | | 0.025 |
| N53912 | EXR350-0.375-D4-C025.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiAlN | 0.025 |
| N53811 | EXR350-0.500-D1-C025.3-Z4 | 1/2 | 1/2 | 1/2 | 2-9/16 | 4 | | 0.025 |
| N53913 | EXR350-0.500-D1-C025.3-Z4 | 1/2 | 1/2 | 1/2 | 2-9/16 | 4 | TiAlN | 0.025 |
| N53812 | EXR350-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | | 0.025 |
| N53914 | EXR350-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiAlN | 0.025 |
| N53813 | EXR350-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | | 0.025 |
| N53915 | EXR350-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiAlN | 0.025 |
| N53815 | EXR350-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | | 0.030 |
| N53917 | EXR350-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiAlN | 0.030 |
| N53818 | EXR350-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-3/4 | 4 | | 0.030 |
| N53920 | EXR350-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-3/4 | 4 | TiAlN | 0.030 |
| N53819 | EXR350-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | | 0.030 |
| N53921 | EXR350-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiAlN | 0.030 |
| N53820 | EXR350-1.000-D1-C030.3-Z5 | 1 | 1 | 1 | 3-7/8 | 5 | | 0.030 |
| N53922 | EXR350-1.000-D1-C030.3-Z5 | 1 | 1 | 1 | 3-7/8 | 5 | TiAlN | 0.030 |
| N53821 | EXR350-1.000-D2-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | | 0.030 |
| N53923 | EXR350-1.000-D2-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | TiAlN | 0.030 |
| N53822 | EXR350-1.000-D3-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | | 0.030 |
| N53924 | EXR350-1.000-D3-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | TiAlN | 0.030 |
| N53823 | EXR350-1.000-D4-C030.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | | 0.030 |
| N53925 | EXR350-1.000-D4-C030.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | TiAlN | 0.030 |
| N53826 | EXR350-1.250-D2-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N53928 | EXR350-1.250-D2-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | TiAlN | 0.040 |
| N53828 | EXR350-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.040 |
| N53930 | EXR350-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | TiAlN | 0.040 |
| N53833 | EXR350-1.500-P4-C040.3-Z6 | 1-1/2 | 1-1/4 | 6 | 8-1/2 | 6 | | 0.040 |
| N53935 | EXR350-1.500-P4-C040.3-Z6 | 1-1/2 | 1-1/4 | 6 | 8-1/2 | 6 | TiAlN | 0.040 |

DISCOUNT CODE D41

# GENERAL PURPOSE- REM445

M42
8% COBALT

HELIX



CHAMFER

NON CENTER CUTTING

FINE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials including high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N44501 | REM445-0.188-F3-C020.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | | 0.020 |
| N75655 | REM445-0.188-F3-C020.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | TiAlN | 0.020 |
| N44503 | REM445-0.250-F3-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | | 0.020 |
| N75656 | REM445-0.250-F3-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiAlN | 0.020 |
| N44505 | REM445-0.250-F5-C020.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | | 0.020 |
| N75657 | REM445-0.250-F5-C020.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | TiAlN | 0.020 |
| N44507 | REM445-0.313-F2-C025.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N75658 | REM445-0.313-F2-C025.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | TiAlN | 0.025 |
| N44509 | REM445-0.313-F4-C025.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | | 0.025 |
| N75659 | REM445-0.313-F4-C025.3-Z4 | 5/16 | 3/8 | 1-3/8 | 3-1/8 | 4 | TiAlN | 0.025 |
| N44511 | REM445-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N75660 | REM445-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiAlN | 0.025 |
| N44513 | REM445-0.375-D4-C025.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | | 0.025 |
| N75661 | REM445-0.375-D4-C025.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiAlN | 0.025 |
| N44515 | REM445-0.438-P2-C025.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | | 0.025 |
| N75662 | REM445-0.438-P2-C025.3-Z4 | 7/16 | 3/8 | 1 | 2-11/16 | 4 | TiAlN | 0.025 |
| N45415 | REM445-0.500-D2-C025.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | | 0.025 |
| N75663 | REM445-0.500-D2-C025.3-Z4 | 1/2 | 1/2 | 1 | 3 | 4 | TiAlN | 0.025 |
| N44517 | REM445-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | | 0.025 |
| N75664 | REM445-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiAlN | 0.025 |
| N45417 | REM445-0.500-D5-C025.3-Z4 | 1/2 | 1/2 | 1-5/8 | 3-5/8 | 4 | | 0.025 |
| N75665 | REM445-0.500-D5-C025.3-Z4 | 1/2 | 1/2 | 1-5/8 | 3-5/8 | 4 | TiAlN | 0.025 |
| N44519 | REM445-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | | 0.025 |
| N75666 | REM445-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiAlN | 0.025 |
| N45419 | REM445-0.500-D6-C025.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | | 0.025 |
| N75667 | REM445-0.500-D6-C025.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiAlN | 0.025 |
| N45421 | REM445-0.500-D7-C025.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | | 0.025 |
| N75668 | REM445-0.500-D7-C025.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | TiAlN | 0.025 |
| N45423 | REM445-0.625-D1-C030.3-Z4 | 5/8 | 5/8 | 3/4 | 2-7/8 | 4 | | 0.030 |
| N75670 | REM445-0.625-D1-C030.3-Z4 | 5/8 | 5/8 | 3/4 | 2-7/8 | 4 | TiAlN | 0.030 |
| N45425 | REM445-0.625-D2-C030.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-3/8 | 4 | | 0.030 |
| N75671 | REM445-0.625-D2-C030.3-Z4 | 5/8 | 5/8 | 1-1/4 | 3-3/8 | 4 | TiAlN | 0.030 |
| N44523 | REM445-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | | 0.030 |
| N75672 | REM445-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiAlN | 0.030 |
| N45427 | REM445-0.625-D5-C030.3-Z4 | 5/8 | 5/8 | 2-1/8 | 4-1/4 | 4 | | 0.030 |

DISCOUNT CODE D41

# GENERAL PURPOSE- REM445

M42
8% COBALT

HELIX
30°

CHAMFER
45°

NON CENTER CUTTING

FINE PITCH

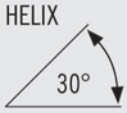
- Weldon flat standard
- Designed for profiling and slotting in all materials including high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N75673 | REM445-0.625-D5-C030.3-Z4 | 5/8 | 5/8 | 2-1/8 | 4-1/4 | 4 | TiAlN | 0.030 |
| N44525 | REM445-0.625-D4-C030.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | | 0.030 |
| N75674 | REM445-0.625-D4-C030.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | TiAlN | 0.030 |
| N45429 | REM445-0.625-D6-C030.3-Z4 | 5/8 | 5/8 | 3-1/8 | 5-1/4 | 4 | | 0.030 |
| N75675 | REM445-0.625-D6-C030.3-Z4 | 5/8 | 5/8 | 3-1/8 | 5-1/4 | 4 | TiAlN | 0.030 |
| N44531 | REM445-0.750-D1-C030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | | 0.030 |
| N75678 | REM445-0.750-D1-C030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | TiAlN | 0.030 |
| N45433 | REM445-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-1/4 | 3-1/2 | 4 | | 0.030 |
| N75679 | REM445-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-1/4 | 3-1/2 | 4 | TiAlN | 0.030 |
| N45435 | REM445-0.750-D3-C030.3-Z4 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 4 | | 0.030 |
| N75680 | REM445-0.750-D3-C030.3-Z4 | 3/4 | 3/4 | 1-1/2 | 3-3/4 | 4 | TiAlN | 0.030 |
| N44527 | REM445-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | | 0.030 |
| N75681 | REM445-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiAlN | 0.030 |
| N45437 | REM445-0.750-D5-C030.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | | 0.030 |
| N75682 | REM445-0.750-D5-C030.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | TiAlN | 0.030 |
| N45439 | REM445-0.750-D6-C030.3-Z4 | 3/4 | 3/4 | 2-1/2 | 4-3/4 | 4 | | 0.030 |
| N75683 | REM445-0.750-D6-C030.3-Z4 | 3/4 | 3/4 | 2-1/2 | 4-3/4 | 4 | TiAlN | 0.030 |
| N44529 | REM445-0.750-D7-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | | 0.030 |
| N75684 | REM445-0.750-D7-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiAlN | 0.030 |
| N45441 | REM445-0.750-D8-C030.3-Z4 | 3/4 | 3/4 | 4-1/8 | 6-3/8 | 4 | | 0.030 |
| N75685 | REM445-0.750-D8-C030.3-Z4 | 3/4 | 3/4 | 4-1/8 | 6-3/8 | 4 | TiAlN | 0.030 |
| N44551 | REM445-1.000-P3-C030.3-Z5 | 1 | 3/4 | 1-1/2 | 3-3/4 | 5 | | 0.030 |
| N75696 | REM445-1.000-P3-C030.3-Z5 | 1 | 3/4 | 1-1/2 | 3-3/4 | 5 | TiAlN | 0.030 |
| N45453 | REM445-1.000-P4-C030.3-Z5 | 1 | 3/4 | 2 | 4-1/4 | 5 | | 0.030 |
| N75697 | REM445-1.000-P4-C030.3-Z5 | 1 | 3/4 | 2 | 4-1/4 | 5 | TiAlN | 0.030 |
| N45459 | REM445-1.000-D1-C030.3-Z5 | 1 | 1 | 1-1/8 | 3-5/8 | 5 | | 0.030 |
| N75700 | REM445-1.000-D1-C030.3-Z5 | 1 | 1 | 1-1/8 | 3-5/8 | 5 | TiAlN | 0.030 |
| N44543 | REM445-1.000-D3-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | | 0.030 |
| N75702 | REM445-1.000-D3-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | TiAlN | 0.030 |
| N44545 | REM445-1.000-D4-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | | 0.030 |
| N75703 | REM445-1.000-D4-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | TiAlN | 0.030 |
| N44547 | REM445-1.000-D5-C030.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | | 0.030 |
| N75704 | REM445-1.000-D5-C030.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | TiAlN | 0.030 |
| N44549 | REM445-1.000-D6-C030.3-Z5 | 1 | 1 | 6 | 8-1/2 | 5 | | 0.030 |
| N75705 | REM445-1.000-D6-C030.3-Z5 | 1 | 1 | 6 | 8-1/2 | 5 | TiAlN | 0.030 |

**DISCOUNT CODE D41**

# GENERAL PURPOSE- REM445

M42
8% COBALT

HELIX



CHAMFER

NON CENTER CUTTING

FINE PITCH

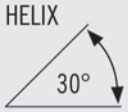
- Weldon flat standard
- Designed for profiling and slotting in all materials including high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N44557 | REM445-1.250-D2-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N75715 | REM445-1.250-D2-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | TiAlN | 0.040 |
| N44559 | REM445-1.250-D3-C040.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | | 0.040 |
| N75716 | REM445-1.250-D3-C040.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | TiAlN | 0.040 |
| N44561 | REM445-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.040 |
| N75717 | REM445-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | TiAlN | 0.040 |
| N44563 | REM445-1.250-D5-C040.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | | 0.040 |
| N75718 | REM445-1.250-D5-C040.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | TiAlN | 0.040 |
| N44569 | REM445-1.500-P5-C040.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N75725 | REM445-1.500-P5-C040.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | TiAlN | 0.040 |
| N44577 | REM445-1.500-P9-C040.3-Z6 | 1-1/2 | 1-1/4 | 6 | 8-1/2 | 6 | | 0.040 |
| N75729 | REM445-1.500-P9-C040.3-Z6 | 1-1/2 | 1-1/4 | 6 | 8-1/2 | 6 | TiAlN | 0.040 |
| N44591 | REM445-2.000-P4-C040.3-Z8 | 2 | 1-1/4 | 2 | 4-1/2 | 8 | | 0.040 |
| N75740 | REM445-2.000-P4-C040.3-Z8 | 2 | 1-1/4 | 2 | 4-1/2 | 8 | TiAlN | 0.040 |
| N44599 | REM445-2.000-D3-C040.7-Z8 | 2 | 2 | 4 | 7-3/4 | 8 | | 0.040 |
| N75745 | REM445-2.000-D3-C040.7-Z8 | 2 | 2 | 4 | 7-3/4 | 8 | TiAlN | 0.040 |
| N44603 | REM445-2.000-D5-C040.7-Z8 | 2 | 2 | 6 | 9-3/4 | 8 | | 0.040 |
| N75747 | REM445-2.000-D5-C040.7-Z8 | 2 | 2 | 6 | 9-3/4 | 8 | TiAlN | 0.040 |

# GENERAL PURPOSE- REC448

M42
8% COBALT

HELIX




CHAMFER

CENTER CUTTING

FINE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials including high temperature alloys

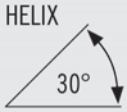
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N44839 | REC448-0.188-F3-C020.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | | 0.020 |
| N14554 | REC448-0.188-F3-C020.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | TiAlN | 0.020 |
| N44841 | REC448-0.250-F3-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | | 0.020 |
| N14555 | REC448-0.250-F3-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiAlN | 0.020 |
| N44843 | REC448-0.250-F5-C020.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | | 0.020 |
| N14556 | REC448-0.250-F5-C020.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | TiAlN | 0.020 |
| N44845 | REC448-0.313-F2-C025.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N14558 | REC448-0.313-F2-C025.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | TiAlN | 0.025 |
| N44873 | REC448-0.375-D1-C025.3-Z4 | 3/8 | 3/8 | 1/2 | 2-1/4 | 4 | | 0.025 |
| N14560 | REC448-0.375-D1-C025.3-Z4 | 3/8 | 3/8 | 1/2 | 2-1/4 | 4 | TiAlN | 0.025 |
| N44849 | REC448-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N14561 | REC448-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiAlN | 0.025 |
| N44876 | REC448-0.500-D1-C025.3-Z4 | 1/2 | 1/2 | 5/8 | 2-5/8 | 4 | | 0.025 |
| N14564 | REC448-0.500-D1-C025.3-Z4 | 1/2 | 1/2 | 5/8 | 2-5/8 | 4 | TiAlN | 0.025 |
| N44801 | REC448-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | | 0.025 |
| N14565 | REC448-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiAlN | 0.025 |
| N44803 | REC448-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | | 0.025 |
| N14566 | REC448-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiAlN | 0.025 |
| N44879 | REC448-0.625-D1-C030.3-Z4 | 5/8 | 5/8 | 5/8 | 2-3/4 | 4 | | 0.030 |
| N14568 | REC448-0.625-D1-C030.3-Z4 | 5/8 | 5/8 | 5/8 | 2-3/4 | 4 | TiAlN | 0.030 |
| N44805 | REC448-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | | 0.030 |
| N14570 | REC448-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiAlN | 0.030 |
| N44807 | REC448-0.625-D4-C030.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | | 0.030 |
| N14571 | REC448-0.625-D4-C030.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | TiAlN | 0.030 |
| N44859 | REC448-0.750-D1-C030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | | 0.030 |
| N14573 | REC448-0.750-D1-C030.3-Z4 | 3/4 | 3/4 | 3/4 | 3 | 4 | TiAlN | 0.030 |
| N44809 | REC448-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | | 0.030 |
| N14574 | REC448-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiAlN | 0.030 |
| N44811 | REC448-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | | 0.030 |
| N14575 | REC448-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiAlN | 0.030 |
| N44882 | REC448-1.000-D1-C030.3-Z5 | 1 | 1 | 1 | 3-1/2 | 5 | | 0.030 |
| N14582 | REC448-1.000-D1-C030.3-Z5 | 1 | 1 | 1 | 3-1/2 | 5 | TiAlN | 0.030 |
| N44819 | REC448-1.000-D2-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | | 0.030 |
| N14583 | REC448-1.000-D2-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | TiAlN | 0.030 |
| N44821 | REC448-1.000-D3-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | | 0.030 |

**DISCOUNT CODE D41**

# GENERAL PURPOSE- REC448

M42
8% COBALT

HELIX




CHAMFER

CENTER CUTTING

FINE PITCH

- Weldon flat standard
- Designed for profiling and slotting in all materials including high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N14584 | REC448-1.000-D3-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | TiAlN | 0.030 |
| N44823 | REC448-1.000-D4-C030.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | | 0.030 |
| N14585 | REC448-1.000-D4-C030.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | TiAlN | 0.030 |
| N44825 | REC448-1.250-D2-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N14588 | REC448-1.250-D2-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | TiAlN | 0.040 |
| N44827 | REC448-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.040 |
| N14590 | REC448-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | TiAlN | 0.040 |
| N44829 | REC448-1.500-P1-C040.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N14591 | REC448-1.500-P1-C040.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | TiAlN | 0.040 |

# GENERAL PURPOSE- RMB449

M42
8% COBALT

HELIX
30°

BALL END

CENTER CUTTING

FINE PITCH

- Weldon flat standard
- Designed for profiling, slotting and contouring in all materials including high temperature alloys

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N44901 | RMB449-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N75764 | RMB449-0.500-D3-B.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiAlN |
| N45903 | RMB449-0.625-D4-B.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | |
| N75767 | RMB449-0.625-D4-B.3-Z4 | 5/8 | 5/8 | 2-1/2 | 4-5/8 | 4 | TiAlN |
| N44905 | RMB449-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | |
| N75768 | RMB449-0.750-D2-B.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiAlN |
| N45905 | RMB449-0.750-D4-B.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | |
| N75769 | RMB449-0.750-D4-B.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiAlN |
| N45907 | RMB449-1.000-D4-B.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | |
| N75771 | RMB449-1.000-D4-B.3-Z5 | 1 | 1 | 4 | 6-1/2 | 5 | TiAlN |

# GENERAL PURPOSE- RFM440

M42
8% COBALT

HELIX
30°

CHAMFER
45°

NON CENTER CUTTING

TRUNCATED

- Weldon flat standard
- Designed for profiling and slotting in all materials

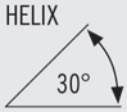
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N44063 | RFM440-0.188-F3-C020.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | | 0.020 |
| N43700 | RFM440-0.188-F3-C020.3-Z4 | 3/16 | 3/8 | 1/2 | 2-3/8 | 4 | TiCN | 0.020 |
| N44083 | RFM440-0.250-F3-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | | 0.020 |
| N43701 | RFM440-0.250-F3-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiCN | 0.020 |
| N44085 | RFM440-0.250-F5-C020.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | | 0.020 |
| N43702 | RFM440-0.250-F5-C020.3-Z4 | 1/4 | 3/8 | 1-1/4 | 3-1/16 | 4 | TiCN | 0.020 |
| N44103 | RFM440-0.313-F2-C025.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N43703 | RFM440-0.313-F2-C025.3-Z4 | 5/16 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN | 0.025 |
| N44123 | RFM440-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N43705 | RFM440-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN | 0.025 |
| N44125 | RFM440-0.375-D4-C025.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | | 0.025 |
| N43706 | RFM440-0.375-D4-C025.3-Z4 | 3/8 | 3/8 | 1-1/2 | 3-1/4 | 4 | TiCN | 0.025 |
| N43163 | RFM440-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | | 0.025 |
| N43709 | RFM440-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiCN | 0.025 |
| N44163 | RFM440-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 1-5/8 | 3-5/8 | 4 | | 0.025 |
| N43710 | RFM440-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 1-5/8 | 3-5/8 | 4 | TiCN | 0.025 |
| N44167 | RFM440-0.500-D6-C025.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | | 0.025 |
| N43712 | RFM440-0.500-D6-C025.3-Z4 | 1/2 | 1/2 | 2-1/2 | 4-1/2 | 4 | TiCN | 0.025 |
| N44204 | RFM440-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | | 0.030 |
| N43717 | RFM440-0.625-D3-C030.3-Z4 | 5/8 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN | 0.030 |
| N43241 | RFM440-0.750-P2-C030.3-Z4 | 3/4 | 5/8 | 1-5/8 | 3-3/4 | 4 | | 0.030 |
| N43722 | RFM440-0.750-P2-C030.3-Z4 | 3/4 | 5/8 | 1-5/8 | 3-3/4 | 4 | TiCN | 0.030 |
| N44242 | RFM440-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-1/4 | 3-1/2 | 4 | | 0.030 |
| N43724 | RFM440-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-1/4 | 3-1/2 | 4 | TiCN | 0.030 |
| N44245 | RFM440-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | | 0.030 |
| N43726 | RFM440-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiCN | 0.030 |
| N44248 | RFM440-0.750-D7-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | | 0.030 |
| N43729 | RFM440-0.750-D7-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiCN | 0.030 |
| N44323 | RFM440-1.000-P3-C030.3-Z5 | 1 | 3/4 | 1-1/2 | 3-3/4 | 5 | | 0.030 |
| N43741 | RFM440-1.000-P3-C030.3-Z5 | 1 | 3/4 | 1-1/2 | 3-3/4 | 5 | TiCN | 0.030 |
| N43322 | RFM440-1.000-D3-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | | 0.030 |
| N43747 | RFM440-1.000-D3-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | TiCN | 0.030 |
| N44362 | RFM440-1.125-P1-C040.3-Z6 | 1-1/8 | 3/4 | 1-1/8 | 3-3/8 | 6 | | 0.040 |
| N43751 | RFM440-1.125-P1-C040.3-Z6 | 1-1/8 | 3/4 | 1-1/8 | 3-3/8 | 6 | TiCN | 0.040 |
| N44368 | RFM440-1.125-P4-C040.3-Z6 | 1-1/8 | 1 | 3-1/2 | 6 | 6 | | 0.040 |
| N43754 | RFM440-1.125-P4-C040.3-Z6 | 1-1/8 | 1 | 3-1/2 | 6 | 6 | TiCN | 0.040 |
| N43562 | RFM440-1.750-P1-C040.3-Z6 | 1-3/4 | 3/4 | 1-1/8 | 3-3/8 | 6 | | 0.040 |
| N43775 | RFM440-1.750-P1-C040.3-Z6 | 1-3/4 | 3/4 | 1-1/8 | 3-3/8 | 6 | TiCN | 0.040 |
| N44653 | RFM440-2.000-D7-C040.7-Z8 | 2 | 2 | 8 | 11-3/4 | 8 | | 0.040 |
| N43791 | RFM440-2.000-D7-C040.7-Z8 | 2 | 2 | 8 | 11-3/4 | 8 | TiCN | 0.040 |

**DISCOUNT CODE D41**

# GENERAL PURPOSE- RFM441

M42
8% COBALT

HELIX




CHAMFER

CENTER CUTTING

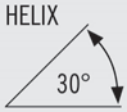
TRUNCATED

- Weldon flat standard
- Designed for profiling and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N41667 | RFM441-0.250-F3-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | | 0.020 |
| N41669 | RFM441-0.250-F3-C020.3-Z4 | 1/4 | 3/8 | 5/8 | 2-7/16 | 4 | TiCN | 0.020 |
| N41670 | RFM441-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | | 0.025 |
| N41672 | RFM441-0.375-D2-C025.3-Z4 | 3/8 | 3/8 | 3/4 | 2-1/2 | 4 | TiCN | 0.025 |
| N41673 | RFM441-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | | 0.025 |
| N41675 | RFM441-0.500-D3-C025.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiCN | 0.025 |
| N41679 | RFM441-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | | 0.025 |
| N41681 | RFM441-0.500-D4-C025.3-Z4 | 1/2 | 1/2 | 2 | 4 | 4 | TiCN | 0.025 |
| N41682 | RFM441-0.500-D6-C025.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | | 0.025 |
| N41684 | RFM441-0.500-D6-C025.3-Z4 | 1/2 | 1/2 | 3 | 5 | 4 | TiCN | 0.025 |
| N41694 | RFM441-0.625-D6-C030.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | | 0.030 |
| N41696 | RFM441-0.625-D6-C030.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | TiCN | 0.030 |
| N41697 | RFM441-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | | 0.030 |
| N41699 | RFM441-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | TiCN | 0.030 |
| N41703 | RFM441-0.750-D3-C030.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | | 0.030 |
| N41705 | RFM441-0.750-D3-C030.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | TiCN | 0.030 |
| N41709 | RFM441-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | | 0.030 |
| N41711 | RFM441-0.750-D4-C030.3-Z4 | 3/4 | 3/4 | 3 | 5-1/4 | 4 | TiCN | 0.030 |
| N41715 | RFM441-0.750-D5-C030.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | | 0.030 |
| N41717 | RFM441-0.750-D5-C030.3-Z4 | 3/4 | 3/4 | 4 | 6-1/4 | 4 | TiCN | 0.030 |
| N41724 | RFM441-1.000-D2-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | | 0.030 |
| N41726 | RFM441-1.000-D2-C030.3-Z5 | 1 | 1 | 2 | 4-1/2 | 5 | TiCN | 0.030 |
| N41730 | RFM441-1.000-D3-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | | 0.030 |
| N41732 | RFM441-1.000-D3-C030.3-Z5 | 1 | 1 | 3 | 5-1/2 | 5 | TiCN | 0.030 |
| N41760 | RFM441-1.500-P1-C040.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N41762 | RFM441-1.500-P1-C040.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | TiCN | 0.040 |
| N41766 | RFM441-2.000-P1-C040.3-Z8 | 2 | 1-1/4 | 2 | 4-1/2 | 8 | | 0.040 |
| N41768 | RFM441-2.000-P1-C040.3-Z8 | 2 | 1-1/4 | 2 | 4-1/2 | 8 | TiCN | 0.040 |

# GENERAL PURPOSE- RFCB444

M42
8% COBALT

HELIX



CHAMFER

CENTER CUTTING

CHIPBREAKER

- Weldon flat standard
- Designed for profiling and slotting in all materials

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING |
|---|---|---|---|---|---|---|---|
| N44918 | RFCB444-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | |
| N44920 | RFCB444-0.500-D3-S.3-Z4 | 1/2 | 1/2 | 1-1/4 | 3-1/4 | 4 | TiCN |
| N44939 | RFCB444-0.625-D6-S.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | |
| N44941 | RFCB444-0.625-D6-S.3-Z4 | 5/8 | 5/8 | 4 | 6-1/8 | 4 | TiCN |
| N44948 | RFCB444-0.750-D3-S.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | |
| N44950 | RFCB444-0.750-D3-S.3-Z4 | 3/4 | 3/4 | 2 | 4-1/4 | 4 | TiCN |
| N44969 | RFCB444-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | |
| N44971 | RFCB444-1.000-D2-S.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | TiCN |
| N44972 | RFCB444-1.000-D2-S.3-Z6 | 1 | 1 | 2 | 4-1/2 | 6 | |
| N44974 | RFCB444-1.000-D2-S.3-Z6 | 1 | 1 | 2 | 4-1/2 | 6 | TiCN |
| N44996 | RFCB444-1.250-D2-S.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | |
| N44998 | RFCB444-1.250-D2-S.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | TiCN |

# GENERAL PURPOSE- VFP435 / VFP635

M42
8% COBALT

HELIX
35°

CHAMFER
45°

CENTER CUTTING

- Optimal chip formation and evacuation
- Polished rake face
- Weldon flat standard
- Designed for stainless steel and titanium

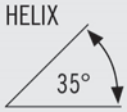
| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N68948 | VFP435-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | | 0.030 |
| N68949 | VFP435-0.750-D3-C030.3-Z4 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 4 | | 0.030 |
| N68952 | VFP435-1.000-D2-C030.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | | 0.030 |
| N68953 | VFP635-1.000-D2-C030.3-Z6 | 1 | 1 | 2 | 4-1/2 | 6 | | 0.030 |
| N68954 | VFP435-1.000-D3-C030.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | | 0.030 |
| N68955 | VFP635-1.000-D3-C030.3-Z6 | 1 | 1 | 3 | 5-1/2 | 6 | | 0.030 |
| N68956 | VFP435-1.000-D4-C030.3-Z4 | 1 | 1 | 4 | 6-1/2 | 4 | | 0.030 |
| N68957 | VFP635-1.000-D4-C030.3-Z6 | 1 | 1 | 4 | 6-1/2 | 6 | | 0.030 |
| N68958 | VFP435-1.250-D2-C040.3-Z4 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 4 | | 0.040 |
| N68959 | VFP635-1.250-D2-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N68960 | VFP435-1.250-D3-C040.3-Z4 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 4 | | 0.040 |
| N68961 | VFP635-1.250-D3-C040.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | | 0.040 |
| N68962 | VFP435-1.250-D4-C040.3-Z4 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 4 | | 0.040 |
| N68963 | VFP635-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.040 |
| N68965 | VFP635-1.500-P1-C040.3-Z6 | 1-1/2 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N68966 | VFP635-1.500-P2-C040.3-Z6 | 1-1/2 | 1-1/4 | 3 | 5-1/2 | 6 | | 0.040 |
| N68967 | VFP635-1.500-P3-C040.3-Z6 | 1-1/2 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.040 |
| N68968 | VFP635-1.500-P4-C040.3-Z6 | 1-1/2 | 1-1/4 | 6 | 8-1/2 | 6 | | 0.040 |
| N68969 | VFP635-2.000-D1-C040.3-Z6 | 2 | 2 | 2 | 5-3/4 | 6 | | 0.040 |
| N68970 | VFP635-2.000-D2-C040.3-Z6 | 2 | 2 | 3 | 6-3/4 | 6 | | 0.040 |
| N68971 | VFP635-2.000-D3-C040.3-Z6 | 2 | 2 | 4 | 7-3/4 | 6 | | 0.040 |
| N68972 | VFP635-2.000-D4-C040.3-Z6 | 2 | 2 | 6 | 9-3/4 | 6 | | 0.040 |

DISCOUNT CODE D41

# GENERAL PURPOSE- VFP²435 / VFP²635

M42
8% COBALT

HELIX




CHAMFER

CENTER CUTTING

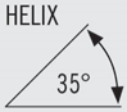
- For less rigid setups
- Optimal chip formation and evacuation
- Polished rake face
- Weldon flat standard
- Designed for stainless steel and titanium

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N68974 | VFP2435-0.750-D2-C030.3-Z4 | 3/4 | 3/4 | 1-5/8 | 3-7/8 | 4 | | 0.030 |
| N68975 | VFP2435-0.750-D3-C030.3-Z4 | 3/4 | 3/4 | 2-1/4 | 4-1/2 | 4 | | 0.030 |
| N68978 | VFP2435-1.000-D2-C030.3-Z4 | 1 | 1 | 2 | 4-1/2 | 4 | | 0.030 |
| N68979 | VFP2635-1.000-D2-C030.3-Z6 | 1 | 1 | 2 | 4-1/2 | 6 | | 0.030 |
| N68980 | VFP2435-1.000-D3-C030.3-Z4 | 1 | 1 | 3 | 5-1/2 | 4 | | 0.030 |
| N68981 | VFP2635-1.000-D3-C030.3-Z6 | 1 | 1 | 3 | 5-1/2 | 6 | | 0.030 |
| N68983 | VFP2635-1.000-D4-C030.3-Z6 | 1 | 1 | 4 | 6-1/2 | 6 | | 0.030 |
| N68985 | VFP2635-1.250-D2-C040.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.040 |
| N68987 | VFP2635-1.250-D3-C040.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | | 0.040 |
| N68989 | VFP2635-1.250-D4-C040.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.040 |
| N68996 | VFP2635-2.000-D2-C040.3-Z6 | 2 | 2 | 3 | 6-3/4 | 6 | | 0.040 |

# COBALT END MILLS- VFP435SB / VFP635SB

M42
8% COBALT

HELIX




CHAMFER

CENTER CUTTING

- Optimal chip formation and evacuation
- Polished rake face
- Weldon flat standard
- Up to .250" corner radius through modification
- Designed for stainless steel and titanium

| EDP | DESCRIPTION | FLUTE DIA | SHANK DIA | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | COATING | CHAMFER |
|---|---|---|---|---|---|---|---|---|
| N69387 | VFP435SB-1.250-D2-C030.3-Z4 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 4 | | 0.030 |
| N69388 | VFP635SB-1.250-D1-C030.3-Z6 | 1-1/4 | 1-1/4 | 2 | 4-1/2 | 6 | | 0.030 |
| N69390 | VFP635SB-1.250-D2-C030.3-Z6 | 1-1/4 | 1-1/4 | 3 | 5-1/2 | 6 | | 0.030 |
| N69391 | VFP435SB-1.250-D4-C030.3-Z4 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 4 | | 0.030 |
| N69392 | VFP635SB-1.250-D3-C030.3-Z6 | 1-1/4 | 1-1/4 | 4 | 6-1/2 | 6 | | 0.030 |
| N69393 | VFP635SB-1.250-D5-C030.3-Z6 | 1-1/4 | 1-1/4 | 6 | 8-1/2 | 6 | | 0.030 |
| N69394 | VFP635SB-2.000-D1-C040.3-Z6 | 2 | 2 | 2 | 5-3/4 | 6 | | 0.040 |
| N69395 | VFP635SB-2.000-D2-C040.3-Z6 | 2 | 2 | 3 | 6-3/4 | 6 | | 0.040 |
| N69396 | VFP635SB-2.000-D3-C040.3-Z6 | 2 | 2 | 4 | 7-3/4 | 6 | | 0.040 |
| N69397 | VFP635SB-2.000-D4-C040.3-Z6 | 2 | 2 | 6 | 9-3/4 | 6 | | 0.040 |
| N69398 | VFP635SB-2.000-D5-C040.3-Z6 | 2 | 2 | 8 | 11-3/4 | 6 | | 0.040 |

Niagara Cutter

**DP530 / SP205**

| | | | | | | SLOTTING | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 2$ | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.00 | 1.00 | 110 | n (rev/min) | 1681 | 1121 | 840 | 672 | 560 | 420 | 336 | 280 | 240 | 210 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 80 - 140 | $v_f$ (in/min) | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| | E 3 - 4 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| | E 5 - 6 | 1.00 | 1.00 | 35 | n (rev/min) | 535 | 357 | 267 | 214 | 178 | 134 | 107 | 89 | 76 | 67 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 25 - 45 | $v_f$ (in/min) | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| M | E 8 - 9 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| | E 10 - 11 | 1.00 | 1.00 | 40 | n (rev/min) | 611 | 407 | 306 | 244 | 204 | 153 | 122 | 102 | 87 | 76 |
| | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 | 0.0038 | 0.0045 | 0.0053 | 0.0060 |
| | | | | 30 - 50 | $v_f$ (in/min) | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| K | E 12 - 13 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 40 - 60 | $v_f$ (in/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| | E 14 - 15 | 1.00 | 1.00 | 40 | n (rev/min) | 611 | 407 | 306 | 244 | 204 | 153 | 122 | 102 | 87 | 76 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 30 - 50 | $v_f$ (in/min) | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| N | E 18 | 1.00 | 1.00 | 240 | n (rev/min) | 3667 | 2445 | 1834 | 1467 | 1222 | 917 | 733 | 611 | 524 | 458 |
| | | | | | $f_z$ (in) | 0.0013 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0088 | 0.0100 |
| | | | | 200 - 280 | $v_f$ (in/min) | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 |
| S | E 20 | 1.00 | 1.00 | 8 | n (rev/min) | 122 | 81 | 61 | 49 | 41 | 31 | 24 | 20 | 17 | 15 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0026 | 0.0030 |
| | | | | 6 - 10 | $v_f$ (in/min) | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| | E 21 | 1.00 | 1.00 | 8 | n (rev/min) | 122 | 81 | 61 | 49 | 41 | 31 | 24 | 20 | 17 | 15 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0044 | 0.0050 |
| | | | | 6 - 10 | $v_f$ (in/min) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | E 22 | 1.00 | 1.00 | 40 | n (rev/min) | 611 | 407 | 306 | 244 | 204 | 153 | 122 | 102 | 87 | 76 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 20 - 60 | $v_f$ (in/min) | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**DP530 / SP205**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 2$ | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.50 | 0.25 | 160 | n (rev/min) | 2445 | 1630 | 1222 | 978 | 815 | 611 | 489 | 407 | 349 | 306 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 120 - 200 | $v_f$ (in/min) | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| | E 3 - 4 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| | E 5 - 6 | 1.50 | 0.25 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 30 - 70 | $v_f$ (in/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| M | E 8 - 9 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| | E 10 - 11 | 1.50 | 0.25 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 | 115 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 | 0.0066 | 0.0075 |
| | | | | 40 - 80 | $v_f$ (in/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| K | E 12 - 13 | 1.50 | 0.25 | 95 | n (rev/min) | 1452 | 968 | 726 | 581 | 484 | 363 | 290 | 242 | 207 | 181 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 75 - 115 | $v_f$ (in/min) | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| | E 14 - 15 | 1.50 | 0.25 | 65 | n (rev/min) | 993 | 662 | 497 | 397 | 331 | 248 | 199 | 166 | 142 | 124 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 45 - 85 | $v_f$ (in/min) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 | 0.0125 |
| | | | | 300 - 400 | $v_f$ (in/min) | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 |
| S | E 20 | 1.50 | 0.25 | 10 | n (rev/min) | 153 | 102 | 76 | 61 | 51 | 38 | 31 | 25 | 22 | 19 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0044 | 0.0050 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | E 21 | 1.50 | 0.25 | 12 | n (rev/min) | 183 | 122 | 92 | 73 | 61 | 46 | 37 | 31 | 26 | 23 |
| | | | | | $f_z$ (in) | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0055 | 0.0063 |
| | | | | 10 - 14 | $v_f$ (in/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | E 22 | 1.50 | 0.25 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 | 115 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 40 - 80 | $v_f$ (in/min) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

SMM835

| | | | | | | SLOTTING | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 2$ | 6 | 10 | 12 | 16 | 20 | 25 | 32 | 38 | 45 | 50 |
| P | E 1 - 2 | 1.00 | 1.00 | 34 | n (rev/min) | | 1800 | 1080 | 900 | 680 | 540 | 430 | 340 | 280 | 240 | 220 |
| | | | | | $f_z$ (mm) | | 0.027 | 0.045 | 0.054 | 0.072 | 0.090 | 0.113 | 0.144 | 0.171 | 0.203 | 0.225 |
| | | | | 24 - 43 | $v_f$ (mm/min) | | 97 | 97 | 97 | 98 | 97 | 97 | 98 | 96 | 97 | 99 |
| | E 3 - 4 | 1.00 | 1.00 | 15 | n (rev/min) | | 800 | 480 | 400 | 300 | 240 | 190 | 150 | 130 | 110 | 100 |
| | | | | | $f_z$ (mm) | | 0.021 | 0.035 | 0.042 | 0.056 | 0.070 | 0.088 | 0.112 | 0.133 | 0.158 | 0.175 |
| | | | | 12 - 18 | $v_f$ (mm/min) | | 34 | 34 | 34 | 34 | 34 | 33 | 34 | 35 | 35 | 35 |
| | E 5 - 6 | 1.00 | 1.00 | 11 | n (rev/min) | | 580 | 350 | 290 | 220 | 180 | 140 | 110 | 90 | 80 | 70 |
| | | | | | $f_z$ (mm) | | 0.021 | 0.035 | 0.042 | 0.056 | 0.070 | 0.088 | 0.112 | 0.133 | 0.158 | 0.175 |
| | | | | 8 - 14 | $v_f$ (mm/min) | | 24 | 25 | 24 | 25 | 25 | 25 | 25 | 24 | 25 | 25 |
| M | E 8 - 9 | 1.00 | 1.00 | 15 | n (rev/min) | | 800 | 480 | 400 | 300 | 240 | 190 | 150 | 130 | 110 | 100 |
| | | | | | $f_z$ (mm) | | 0.021 | 0.035 | 0.042 | 0.056 | 0.070 | 0.088 | 0.112 | 0.133 | 0.158 | 0.175 |
| | | | | 12 - 18 | $v_f$ (mm/min) | | 34 | 34 | 34 | 34 | 34 | 33 | 34 | 35 | 35 | 35 |
| | E 10 - 11 | 1.00 | 1.00 | 12 | n (rev/min) | | 640 | 380 | 320 | 240 | 190 | 150 | 120 | 100 | 80 | 80 |
| | | | | | $f_z$ (mm) | | 0.018 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 | 0.096 | 0.114 | 0.135 | 0.150 |
| | | | | 9 - 15 | $v_f$ (mm/min) | | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 22 | 24 |
| K | E 12 - 13 | 1.00 | 1.00 | 15 | n (rev/min) | | 800 | 480 | 400 | 300 | 240 | 190 | 150 | 130 | 110 | 100 |
| | | | | | $f_z$ (mm) | | 0.027 | 0.045 | 0.054 | 0.072 | 0.090 | 0.113 | 0.144 | 0.171 | 0.203 | 0.225 |
| | | | | 12 - 18 | $v_f$ (mm/min) | | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 44 | 45 | 45 |
| | E 14 - 15 | 1.00 | 1.00 | 12 | n (rev/min) | | 640 | 380 | 320 | 240 | 190 | 150 | 120 | 100 | 80 | 80 |
| | | | | | $f_z$ (mm) | | 0.021 | 0.035 | 0.042 | 0.056 | 0.070 | 0.088 | 0.112 | 0.133 | 0.158 | 0.175 |
| | | | | 9 - 15 | $v_f$ (mm/min) | | 27 | 27 | 27 | 27 | 27 | 26 | 27 | 27 | 25 | 28 |
| N | E 18 | 1.00 | 1.00 | 73 | n (rev/min) | | 3870 | 2320 | 1940 | 1450 | 1160 | 930 | 730 | 610 | 520 | 460 |
| | | | | | $f_z$ (mm) | | 0.030 | 0.050 | 0.060 | 0.080 | 0.100 | 0.125 | 0.160 | 0.190 | 0.225 | 0.250 |
| | | | | 61 - 85 | $v_f$ (mm/min) | | 232 | 232 | 233 | 232 | 232 | 233 | 234 | 232 | 234 | 230 |
| S | E 20 | 1.00 | 1.00 | 2 | n (rev/min) | | 110 | 60 | 50 | 40 | 30 | 30 | 20 | 20 | 10 | 10 |
| | | | | | $f_z$ (mm) | | 0.009 | 0.015 | 0.018 | 0.024 | 0.030 | 0.038 | 0.048 | 0.057 | 0.068 | 0.075 |
| | | | | 2 - 3 | $v_f$ (mm/min) | | 2.0 | 1.8 | 1.8 | 1.9 | 1.8 | 2.3 | 1.9 | 2.3 | 1.4 | 1.5 |
| | E 21 | 1.00 | 1.00 | 2 | n (rev/min) | | 110 | 60 | 50 | 40 | 30 | 30 | 20 | 20 | 10 | 10 |
| | | | | | $f_z$ (mm) | | 0.015 | 0.025 | 0.030 | 0.040 | 0.050 | 0.063 | 0.080 | 0.095 | 0.113 | 0.125 |
| | | | | 2 - 3 | $v_f$ (mm/min) | | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 2 | 3 |
| | E 22 | 1.00 | 1.00 | 12 | n (rev/min) | | 640 | 380 | 320 | 240 | 190 | 150 | 120 | 100 | 80 | 80 |
| | | | | | $f_z$ (mm) | | 0.021 | 0.035 | 0.042 | 0.056 | 0.070 | 0.088 | 0.112 | 0.133 | 0.158 | 0.175 |
| | | | | 6 - 18 | $v_f$ (mm/min) | | 27 | 27 | 27 | 27 | 27 | 26 | 27 | 27 | 25 | 28 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

SMM835

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | Zn = 2 | | | | | | | | | | |
| | | | | | | 6 | 10 | 12 | 16 | 20 | 25 | 32 | 38 | 45 | 50 |
| P | E 1 - 2 | 1.50 | 0.25 | 160 | n (rev/min) | 102 | 61 | 51 | 38 | 31 | 24 | 19 | 16 | 14 | 12 |
| | | | | | $f_z$ (mm) | 0.0338 | 0.0563 | 0.0675 | 0.0900 | 0.1125 | 0.1406 | 0.1800 | 0.2138 | 0.2531 | 0.2813 |
| | | | | 120 - 200 | $v_f$ (mm/min) | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| | E 3 - 4 | 1.50 | 0.25 | 80 | n (rev/min) | 51 | 31 | 25 | 19 | 15 | 12 | 10 | 8 | 7 | 6 |
| | | | | | $f_z$ (mm) | 0.0263 | 0.0438 | 0.0525 | 0.0700 | 0.0875 | 0.1094 | 0.1400 | 0.1663 | 0.1969 | 0.2188 |
| | | | | 60 - 100 | $v_f$ (mm/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| | E 5 - 6 | 1.50 | 0.25 | 50 | n (rev/min) | 32 | 19 | 16 | 12 | 10 | 8 | 6 | 5 | 4 | 4 |
| | | | | | $f_z$ (mm) | 0.0263 | 0.0438 | 0.0525 | 0.0700 | 0.0875 | 0.1094 | 0.1400 | 0.1663 | 0.1969 | 0.2188 |
| | | | | 30 - 70 | $v_f$ (mm/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| M | E 8 - 9 | 1.50 | 0.25 | 80 | n (rev/min) | 51 | 31 | 25 | 19 | 15 | 12 | 10 | 8 | 7 | 6 |
| | | | | | $f_z$ (mm) | 0.0263 | 0.0438 | 0.0525 | 0.0700 | 0.0875 | 0.1094 | 0.1400 | 0.1663 | 0.1969 | 0.2188 |
| | | | | 60 - 100 | $v_f$ (mm/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| | E 10 - 11 | 1.50 | 0.25 | 60 | n (rev/min) | 38 | 23 | 19 | 14 | 11 | 9 | 7 | 6 | 5 | 5 |
| | | | | | $f_z$ (mm) | 0.0225 | 0.0375 | 0.0450 | 0.0600 | 0.0750 | 0.0938 | 0.1200 | 0.1425 | 0.1688 | 0.1875 |
| | | | | 40 - 80 | $v_f$ (mm/min) | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| K | E 12 - 13 | 1.50 | 0.25 | 95 | n (rev/min) | 60 | 36 | 30 | 23 | 18 | 15 | 11 | 10 | 8 | 7 |
| | | | | | $f_z$ (mm) | 0.0338 | 0.0563 | 0.0675 | 0.0900 | 0.1125 | 0.1406 | 0.1800 | 0.2138 | 0.2531 | 0.2813 |
| | | | | 75 - 115 | $v_f$ (mm/min) | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| | E 14 - 15 | 1.50 | 0.25 | 65 | n (rev/min) | 41 | 25 | 21 | 16 | 12 | 10 | 8 | 7 | 6 | 5 |
| | | | | | $f_z$ (mm) | 0.0263 | 0.0438 | 0.0525 | 0.0700 | 0.0875 | 0.1094 | 0.1400 | 0.1663 | 0.1969 | 0.2188 |
| | | | | 45 - 85 | $v_f$ (mm/min) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 223 | 134 | 111 | 84 | 67 | 53 | 42 | 35 | 30 | 27 |
| | | | | | $f_z$ (mm) | 0.0375 | 0.0625 | 0.0750 | 0.1000 | 0.1250 | 0.1563 | 0.2000 | 0.2375 | 0.2813 | 0.3125 |
| | | | | 300 - 400 | $v_f$ (mm/min) | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 |
| S | E 20 | 1.50 | 0.25 | 10 | n (rev/min) | 6 | 4 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| | | | | | $f_z$ (mm) | 0.0150 | 0.0250 | 0.0300 | 0.0400 | 0.0500 | 0.0625 | 0.0800 | 0.0950 | 0.1125 | 0.1250 |
| | | | | 8 - 12 | $v_f$ (mm/min) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | E 21 | 1.50 | 0.25 | 12 | n (rev/min) | 8 | 5 | 4 | 3 | 2 | 2 | 1 | 1 | 1 | 1 |
| | | | | | $f_z$ (mm) | 0.0188 | 0.0313 | 0.0375 | 0.0500 | 0.0625 | 0.0781 | 0.1000 | 0.1188 | 0.1406 | 0.1563 |
| | | | | 10 - 14 | $v_f$ (mm/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | E 22 | 1.50 | 0.25 | 60 | n (rev/min) | 38 | 23 | 19 | 14 | 11 | 9 | 7 | 6 | 5 | 5 |
| | | | | | $f_z$ (mm) | 0.0263 | 0.0438 | 0.0525 | 0.0700 | 0.0875 | 0.1094 | 0.1400 | 0.1663 | 0.1969 | 0.2188 |
| | | | | 40 - 80 | $v_f$ (mm/min) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

EX350

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 2$ | | | | $Z_n = 5$ | $Z_n = 6$ | |
| | | | | | | | | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 |
| M | E 8 - 9 | 1.00 | 1.00 | | 80 | | n (rev/min) | 815 | 611 | 489 | 407 | 306 | 244 | 204 |
| | | | | | | | $f_z$ (in) | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 | 0.0038 | 0.0045 |
| | | | | 70 | - | 90 | $v_f$ (in/min) | 3.7 | 3.7 | 3.7 | 3.7 | 4.6 | 5.5 | 5.5 |
| | E 10 - 11 | 1.00 | 1.00 | | 60 | | n (rev/min) | 611 | 458 | 367 | 306 | 229 | 183 | 153 |
| | | | | | | | $f_z$ (in) | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 | 0.0038 | 0.0045 |
| | | | | 50 | - | 70 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 3.4 | 4.1 | 4.1 |
| S | E 20 | 1.00 | 1.00 | | 8 | | n (rev/min) | 81 | 61 | 49 | 41 | 31 | 24 | 20 |
| | | | | | | | $f_z$ (in) | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0023 |
| | | | | 6 | - | 10 | $v_f$ (in/min) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 |
| | E 21 | 1.00 | 1.00 | | 8 | | n (rev/min) | 81 | 61 | 49 | 41 | 31 | 24 | 20 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 |
| | | | | 6 | - | 10 | $v_f$ (in/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 |
| | E 22 | 1.00 | 1.00 | | 40 | | n (rev/min) | 407 | 306 | 244 | 204 | 153 | 122 | 102 |
| | | | | | | | $f_z$ (in) | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 |
| | | | | 30 | - | 50 | $v_f$ (in/min) | 2.1 | 2.1 | 2.1 | 2.1 | 2.7 | 3.2 | 3.2 |

EX350

| SLOTTING | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 8$ |
| | | | | | | | | 2 |
| M | E 8 - 9 | 0.50 | 1.00 | | 80 | | n (rev/min) | 153 |
| | | | | | | | $f_z$ (in) | 0.0060 |
| | | | | 70 | - | 90 | $v_f$ (in/min) | 7.3 |
| | E 10 - 11 | 0.50 | 1.00 | | 60 | | n (rev/min) | 115 |
| | | | | | | | $f_z$ (in) | 0.0060 |
| | | | | 50 | - | 70 | $v_f$ (in/min) | 5.5 |
| S | E 20 | 0.50 | 1.00 | | 8 | | n (rev/min) | 15 |
| | | | | | | | $f_z$ (in) | 0.0030 |
| | | | | 6 | - | 10 | $v_f$ (in/min) | 0.4 |
| | E 21 | 0.50 | 1.00 | | 8 | | n (rev/min) | 15 |
| | | | | | | | $f_z$ (in) | 0.0050 |
| | | | | 6 | - | 10 | $v_f$ (in/min) | 0.6 |
| | E 22 | 0.50 | 1.00 | | 40 | | n (rev/min) | 76 |
| | | | | | | | $f_z$ (in) | 0.0070 |
| | | | | 30 | - | 50 | $v_f$ (in/min) | 4.3 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

EX350

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | | $Z_n = 5$ | $Z_n = 6$ | |
| | | | | | | | | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 |
| M | E 8 - 9 | 1.50 | 0.25 | | 96 | | n (rev/min) | 978 | 733 | 587 | 489 | 367 | 293 | 244 |
| | | | | | | | $f_z$ (in) | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 |
| | | | | 86 | - | 106 | $v_f$ (in/min) | 5.5 | 5.5 | 5.5 | 5.5 | 6.9 | 8.3 | 8.3 |
| | E 10 - 11 | 1.50 | 0.25 | | 72 | | n (rev/min) | 733 | 550 | 440 | 367 | 275 | 220 | 183 |
| | | | | | | | $f_z$ (in) | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 |
| | | | | 62 | - | 82 | $v_f$ (in/min) | 4.1 | 4.1 | 4.1 | 4.1 | 5.2 | 6.2 | 6.2 |
| S | E 20 | 1.50 | 0.25 | | 10 | | n (rev/min) | 98 | 73 | 59 | 49 | 37 | 29 | 24 |
| | | | | | | | $f_z$ (in) | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0019 | 0.0023 | 0.0028 |
| | | | | 8 | - | 12 | $v_f$ (in/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 |
| | E 21 | 1.50 | 0.25 | | 10 | | n (rev/min) | 98 | 73 | 59 | 49 | 37 | 29 | 24 |
| | | | | | | | $f_z$ (in) | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0031 | 0.0039 | 0.0047 |
| | | | | 8 | - | 12 | $v_f$ (in/min) | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 |
| | E 22 | 1.50 | 0.25 | | 48 | | n (rev/min) | 489 | 367 | 293 | 244 | 183 | 147 | 122 |
| | | | | | | | $f_z$ (in) | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 |
| | | | | 38 | - | 58 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 4.0 | 4.8 | 4.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**SP408 / SPC408 / SPB540 / DPC560**

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.00 | 1.00 | 110 | n (rev/min) | 1681 | 1121 | 840 | 672 | 560 | 420 | 336 | 280 | 240 | 210 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 80 - 140 | $v_f$ (in/min) | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 |
| | E 3 - 4 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| | E 5 - 6 | 1.00 | 1.00 | 35 | n (rev/min) | 535 | 357 | 267 | 214 | 178 | 134 | 107 | 89 | 76 | 67 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 25 - 45 | $v_f$ (in/min) | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| M | E 8 - 9 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| | E 10 - 11 | 1.00 | 1.00 | 40 | n (rev/min) | 611 | 407 | 306 | 244 | 204 | 153 | 122 | 102 | 87 | 76 |
| | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 | 0.0038 | 0.0045 | 0.0053 | 0.0060 |
| | | | | 30 - 50 | $v_f$ (in/min) | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| K | E 12 - 13 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 40 - 60 | $v_f$ (in/min) | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| | E 14 - 15 | 1.00 | 1.00 | 40 | n (rev/min) | 611 | 407 | 306 | 244 | 204 | 153 | 122 | 102 | 87 | 76 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 30 - 50 | $v_f$ (in/min) | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| N | E 18 | 1.00 | 1.00 | 240 | n (rev/min) | 3667 | 2445 | 1834 | 1467 | 1222 | 917 | 733 | 611 | 524 | 458 |
| | | | | | $f_z$ (in) | 0.0013 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0088 | 0.0100 |
| | | | | 200 - 280 | $v_f$ (in/min) | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 |
| S | E 20 | 1.00 | 1.00 | 8 | n (rev/min) | 122 | 81 | 61 | 49 | 41 | 31 | 24 | 20 | 17 | 15 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0026 | 0.0030 |
| | | | | 6 - 10 | $v_f$ (in/min) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | E 21 | 1.00 | 1.00 | 8 | n (rev/min) | 122 | 81 | 61 | 49 | 41 | 31 | 24 | 20 | 17 | 15 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0044 | 0.0050 |
| | | | | 6 - 10 | $v_f$ (in/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | E 22 | 1.00 | 1.00 | 40 | n (rev/min) | 611 | 407 | 306 | 244 | 204 | 153 | 122 | 102 | 87 | 76 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 20 - 60 | $v_f$ (in/min) | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**SP408 / SPC408 / SPB540 / DPC560**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.50 | 0.25 | 160 | n (rev/min) | 2445 | 1630 | 1222 | 978 | 815 | 611 | 489 | 407 | 349 | 306 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 120 - 200 | $v_f$ (in/min) | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 |
| | E 3 - 4 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 |
| | E 5 - 6 | 1.50 | 0.25 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 30 - 70 | $v_f$ (in/min) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| M | E 8 - 9 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 |
| | E 10 - 11 | 1.50 | 0.25 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 | 115 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 | 0.0066 | 0.0075 |
| | | | | 40 - 80 | $v_f$ (in/min) | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| K | E 12 - 13 | 1.50 | 0.25 | 95 | n (rev/min) | 1452 | 968 | 726 | 581 | 484 | 363 | 290 | 242 | 207 | 181 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 75 - 115 | $v_f$ (in/min) | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 |
| | E 14 - 15 | 1.50 | 0.25 | 65 | n (rev/min) | 993 | 662 | 497 | 397 | 331 | 248 | 199 | 166 | 142 | 124 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 45 - 85 | $v_f$ (in/min) | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 | 0.0125 |
| | | | | 300 - 400 | $v_f$ (in/min) | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 |
| S | E 20 | 1.50 | 0.25 | 10 | n (rev/min) | 153 | 102 | 76 | 61 | 51 | 38 | 31 | 25 | 22 | 19 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0044 | 0.0050 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| | E 21 | 1.50 | 0.25 | 12 | n (rev/min) | 183 | 122 | 92 | 73 | 61 | 46 | 37 | 31 | 26 | 23 |
| | | | | | $f_z$ (in) | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0055 | 0.0063 |
| | | | | 10 - 14 | $v_f$ (in/min) | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| | E 22 | 1.50 | 0.25 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 | 115 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 40 - 80 | $v_f$ (in/min) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**SP408 / SPC408 / SPB540 / DPC560**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 6$ | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.50 | 0.25 | 160 | n (rev/min) | 2445 | 1630 | 1222 | 978 | 815 | 611 | 489 | 407 | 349 | 306 |
| | | | | | $f_z$ (mm) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 120 - 200 | $v_f$ (m/min) | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 |
| | E 3 - 4 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (mm) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (m/min) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| | E 5 - 6 | 1.50 | 0.25 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (mm) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 30 - 70 | $v_f$ (m/min) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| M | E 8 - 9 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (mm) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (m/min) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| | E 10 - 11 | 1.50 | 0.25 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 | 115 |
| | | | | | $f_z$ (mm) | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 | 0.0066 | 0.0075 |
| | | | | 40 - 80 | $v_f$ (m/min) | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 |
| K | E 12 - 13 | 1.50 | 0.25 | 95 | n (rev/min) | 1452 | 968 | 726 | 581 | 484 | 363 | 290 | 242 | 207 | 181 |
| | | | | | $f_z$ (mm) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 75 - 115 | $v_f$ (m/min) | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 |
| | E 14 - 15 | 1.50 | 0.25 | 65 | n (rev/min) | 993 | 662 | 497 | 397 | 331 | 248 | 199 | 166 | 142 | 124 |
| | | | | | $f_z$ (mm) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 45 - 85 | $v_f$ (m/min) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (mm) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 | 0.0125 |
| | | | | 300 - 400 | $v_f$ (m/min) | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 |
| S | E 20 | 1.50 | 0.25 | 10 | n (rev/min) | 153 | 102 | 76 | 61 | 51 | 38 | 31 | 25 | 22 | 19 |
| | | | | | $f_z$ (mm) | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0044 | 0.0050 |
| | | | | 8 - 12 | $v_f$ (m/min) | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| | E 21 | 1.50 | 0.25 | 12 | n (rev/min) | 183 | 122 | 92 | 73 | 61 | 46 | 37 | 31 | 26 | 23 |
| | | | | | $f_z$ (mm) | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0055 | 0.0063 |
| | | | | 10 - 14 | $v_f$ (m/min) | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| | E 22 | 1.50 | 0.25 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 | 115 |
| | | | | | $f_z$ (mm) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 40 - 80 | $v_f$ (m/min) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

HDP890

| SIDE MILLING - ROUGHING | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 8$ 2 |
| P | E 1 - 2 | 2.00 | 0.25 | | 160 | | n (rev/min) | 306 |
| | | | | | | | $f_z$ (mm) | 0.0112 |
| | | | | 120 | - | 200 | $v_f$ (m/min) | 20.5 |
| | E 3 - 4 | 2.00 | 0.25 | | 80 | | n (rev/min) | 153 |
| | | | | | | | $f_z$ (mm) | 0.0088 |
| | | | | 60 | - | 100 | $v_f$ (m/min) | 8.1 |
| | E 5 - 6 | 2.00 | 0.25 | | 50 | | n (rev/min) | 96 |
| | | | | | | | $f_z$ (mm) | 0.0088 |
| | | | | 30 | - | 70 | $v_f$ (m/min) | 5.0 |
| M | E 8 - 9 | 2.00 | 0.25 | | 80 | | n (rev/min) | 153 |
| | | | | | | | $f_z$ (mm) | 0.0088 |
| | | | | 60 | - | 100 | $v_f$ (m/min) | 8.1 |
| | E 10 - 11 | 2.00 | 0.25 | | 60 | | n (rev/min) | 115 |
| | | | | | | | $f_z$ (mm) | 0.0760 |
| | | | | 40 | - | 80 | $v_f$ (m/min) | 52.3 |
| K | E 12 - 13 | 2.00 | 0.25 | | 95 | | n (rev/min) | 181 |
| | | | | | | | $f_z$ (mm) | 0.0112 |
| | | | | 75 | - | 115 | $v_f$ (m/min) | 12.2 |
| | E 14 - 15 | 2.00 | 0.25 | | 65 | | n (rev/min) | 124 |
| | | | | | | | $f_z$ (mm) | 0.0088 |
| | | | | 45 | - | 85 | $v_f$ (m/min) | 6.6 |
| N | E 18 | 2.00 | 0.25 | | 350 | | n (rev/min) | 669 |
| | | | | | | | $f_z$ (mm) | 0.0126 |
| | | | | 300 | - | 400 | $v_f$ (m/min) | 50.5 |
| S | E 20 | 2.00 | 0.25 | | 10 | | n (rev/min) | 19 |
| | | | | | | | $f_z$ (mm) | 0.0050 |
| | | | | 8 | - | 12 | $v_f$ (m/min) | 0.6 |
| | E 21 | 2.00 | 0.25 | | 12 | | n (rev/min) | 23 |
| | | | | | | | $f_z$ (mm) | 0.0062 |
| | | | | 10 | - | 14 | $v_f$ (m/min) | 0.9 |
| | E 22 | 2.00 | 0.25 | | 60 | | n (rev/min) | 115 |
| | | | | | | | $f_z$ (mm) | 0.0088 |
| | | | | 40 | - | 80 | $v_f$ (m/min) | 6.1 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

SMM845

| SLOTTING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 4$ 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 1.00 | 1.00 | 34 | n (rev/min) | 1800 | 1080 | 900 | 680 | 540 | 430 |
| | | | | | $f_z$ (mm) | 0.027 | 0.045 | 0.054 | 0.072 | 0.090 | 0.113 |
| | | | | 24 - 43 | $v_f$ (m/min) | 194 | 194 | 194 | 196 | 194 | 194 |
| | E 3 - 4 | 1.00 | 1.00 | 15 | n (rev/min) | 800 | 480 | 400 | 300 | 240 | 190 |
| | | | | | $f_z$ (mm) | 0.021 | 0.035 | 0.042 | 0.056 | 0.070 | 0.088 |
| | | | | 12 - 18 | $v_f$ (m/min) | 67 | 67 | 67 | 67 | 67 | 67 |
| | E 5 - 6 | 1.00 | 1.00 | 11 | n (rev/min) | 580 | 350 | 290 | 220 | 180 | 140 |
| | | | | | $f_z$ (mm) | 0.021 | 0.035 | 0.042 | 0.056 | 0.070 | 0.088 |
| | | | | 8 - 14 | $v_f$ (m/min) | 49 | 49 | 49 | 49 | 50 | 49 |
| M | E 8 - 9 | 1.00 | 1.00 | 15 | n (rev/min) | 800 | 480 | 400 | 300 | 240 | 190 |
| | | | | | $f_z$ (mm) | 0.021 | 0.035 | 0.042 | 0.056 | 0.070 | 0.088 |
| | | | | 12 - 18 | $v_f$ (m/min) | 67 | 67 | 67 | 67 | 67 | 67 |
| | E 10 - 11 | 1.00 | 1.00 | 12 | n (rev/min) | 640 | 380 | 320 | 240 | 190 | 150 |
| | | | | | $f_z$ (mm) | 0.018 | 0.030 | 0.036 | 0.048 | 0.060 | 0.075 |
| | | | | 9 - 15 | $v_f$ (m/min) | 46 | 46 | 46 | 46 | 46 | 45 |
| K | E 12 - 13 | 1.00 | 1.00 | 15 | n (rev/min) | 800 | 480 | 400 | 300 | 240 | 190 |
| | | | | | $f_z$ (mm) | 0.027 | 0.045 | 0.054 | 0.072 | 0.090 | 0.113 |
| | | | | 12 - 18 | $v_f$ (m/min) | 86 | 86 | 86 | 86 | 86 | 86 |
| | E 14 - 15 | 1.00 | 1.00 | 12 | n (rev/min) | 640 | 380 | 320 | 240 | 190 | 150 |
| | | | | | $f_z$ (mm) | 0.0210 | 0.0350 | 0.0420 | 0.0560 | 0.0700 | 0.0875 |
| | | | | 9 - 15 | $v_f$ (m/min) | 53.8 | 53.2 | 53.8 | 53.8 | 53.2 | 52.5 |
| N | E 18 | 1.00 | 1.00 | 73 | n (rev/min) | 3870 | 2320 | 1940 | 1450 | 1160 | 930 |
| | | | | | $f_z$ (mm) | 0.030 | 0.050 | 0.060 | 0.080 | 0.100 | 0.125 |
| | | | | 61 - 85 | $v_f$ (m/min) | 464 | 464 | 466 | 464 | 464 | 465 |
| S | E 20 | 1.00 | 1.00 | 2 | n (rev/min) | 110 | 60 | 50 | 40 | 30 | 30 |
| | | | | | $f_z$ (mm) | 0.009 | 0.015 | 0.018 | 0.024 | 0.030 | 0.038 |
| | | | | 2 - 3 | $v_f$ (m/min) | 4.0 | 3.6 | 3.6 | 3.8 | 3.6 | 4.5 |
| | E 21 | 1.00 | 1.00 | 2 | n (rev/min) | 110 | 60 | 50 | 40 | 30 | 30 |
| | | | | | $f_z$ (mm) | 0.015 | 0.025 | 0.030 | 0.040 | 0.050 | 0.063 |
| | | | | 2 - 3 | $v_f$ (m/min) | 6.6 | 6.0 | 6.0 | 6.4 | 6.0 | 7.5 |
| | E 22 | 1.00 | 1.00 | 12 | n (rev/min) | 640 | 380 | 320 | 240 | 190 | 150 |
| | | | | | $f_z$ (mm) | 0.021 | 0.035 | 0.042 | 0.056 | 0.070 | 0.088 |
| | | | | 6 - 18 | $v_f$ (m/min) | 54 | 53 | 54 | 54 | 53 | 53 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

SMM845

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 4$ 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 1.50 | 0.25 | 49 | n (rev/min) | 2600 | 1560 | 1300 | 970 | 780 | 620 |
| | | | | | $f_z$ (mm) | 0.034 | 0.056 | 0.068 | 0.090 | 0.113 | 0.141 |
| | | | | 37 - 61 | $v_f$ (m/min) | 351 | 351 | 351 | 349 | 351 | 349 |
| | E 3 - 4 | 1.50 | 0.25 | 24 | n (rev/min) | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.088 | 0.109 |
| | | | | 18 - 30 | $v_f$ (m/min) | 133 | 133 | 134 | 134 | 133 | 136 |
| | E 5 - 6 | 1.50 | 0.25 | 15 | n (rev/min) | 800 | 480 | 400 | 300 | 240 | 190 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.088 | 0.109 |
| | | | | 9 - 21 | $v_f$ (m/min) | 84 | 84 | 84 | 84 | 84 | 83 |
| M | E 8 - 9 | 1.50 | 0.25 | 24 | n (rev/min) | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.088 | 0.109 |
| | | | | 18 - 30 | $v_f$ (m/min) | 133 | 133 | 134 | 134 | 133 | 136 |
| | E 10 - 11 | 1.50 | 0.25 | 18 | n (rev/min) | 950 | 570 | 480 | 360 | 290 | 230 |
| | | | | | $f_z$ (mm) | 0.023 | 0.038 | 0.045 | 0.060 | 0.075 | 0.094 |
| | | | | 12 - 24 | $v_f$ (m/min) | 86 | 86 | 86 | 86 | 87 | 86 |
| K | E 12 - 13 | 1.50 | 0.25 | 29 | n (rev/min) | 1540 | 920 | 770 | 580 | 460 | 370 |
| | | | | | $f_z$ (mm) | 0.034 | 0.056 | 0.068 | 0.090 | 0.113 | 0.141 |
| | | | | 23 - 35 | $v_f$ (m/min) | 208 | 207 | 208 | 209 | 207 | 208 |
| | E 14 - 15 | 1.50 | 0.25 | 20 | n (rev/min) | 1060 | 640 | 530 | 400 | 320 | 250 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.088 | 0.109 |
| | | | | 14 - 26 | $v_f$ (m/min) | 111 | 112 | 111 | 112 | 112 | 109 |
| N | E 18 | 1.50 | 0.25 | 107 | n (rev/min) | 5680 | 3410 | 2840 | 2130 | 1700 | 1360 |
| | | | | | $f_z$ (mm) | 0.038 | 0.063 | 0.075 | 0.100 | 0.125 | 0.156 |
| | | | | 91 - 122 | $v_f$ (m/min) | 852 | 853 | 852 | 852 | 850 | 850 |
| S | E 20 | 1.50 | 0.25 | 3 | n (rev/min) | 160 | 100 | 80 | 60 | 50 | 40 |
| | | | | | $f_z$ (mm) | 0.015 | 0.025 | 0.030 | 0.040 | 0.050 | 0.063 |
| | | | | 2 - 4 | $v_f$ (m/min) | 9.6 | 10.0 | 9.6 | 9.6 | 10.0 | 10.0 |
| | E 21 | 1.50 | 0.25 | 4 | n (rev/min) | 210 | 130 | 110 | 80 | 60 | 50 |
| | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.038 | 0.050 | 0.063 | 0.078 |
| | | | | 3 - 4 | $v_f$ (m/min) | 15.8 | 16.3 | 16.5 | 16.0 | 15.0 | 15.6 |
| | E 22 | 1.50 | 0.25 | 18 | n (rev/min) | 950 | 570 | 480 | 360 | 290 | 230 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.088 | 0.109 |
| | | | | 12 - 24 | $v_f$ (m/min) | 100 | 100 | 101 | 101 | 102 | 101 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

SMM845

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (m / min) | | $Z_n = 6$ | | | | | |
| | | | | | | 6 | 10 | 12 | 16 | 20 | 25 |
| P | E 1 - 2 | 1.50 | 0.25 | 49 | n (rev/min) | 2600 | 1560 | 1300 | 970 | 780 | 620 |
| | | | | | $f_z$ (mm) | 0.034 | 0.056 | 0.068 | 0.090 | 0.113 | 0.141 |
| | | | | 37 - 61 | $v_f$ (m/min) | 527 | 527 | 527 | 524 | 527 | 523 |
| | E 3 - 4 | 1.50 | 0.25 | 24 | n (rev/min) | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.088 | 0.109 |
| | | | | 18 - 30 | $v_f$ (m/min) | 200 | 200 | 202 | 202 | 200 | 203 |
| | E 5 - 6 | 1.50 | 0.25 | 15 | n (rev/min) | 800 | 480 | 400 | 300 | 240 | 190 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.088 | 0.109 |
| | | | | 9 - 21 | $v_f$ (m/min) | 126 | 126 | 126 | 126 | 126 | 125 |
| M | E 8 - 9 | 1.50 | 0.25 | 24 | n (rev/min) | 1270 | 760 | 640 | 480 | 380 | 310 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.088 | 0.109 |
| | | | | 18 - 30 | $v_f$ (m/min) | 200 | 200 | 202 | 202 | 200 | 203 |
| | E 10 - 11 | 1.50 | 0.25 | 18 | n (rev/min) | 950 | 570 | 480 | 360 | 290 | 230 |
| | | | | | $f_z$ (mm) | 0.023 | 0.038 | 0.045 | 0.060 | 0.075 | 0.094 |
| | | | | 12 - 24 | $v_f$ (m/min) | 128 | 128 | 130 | 130 | 131 | 129 |
| K | E 12 - 13 | 1.50 | 0.25 | 29 | n (rev/min) | 1540 | 920 | 770 | 580 | 460 | 370 |
| | | | | | $f_z$ (mm) | 0.034 | 0.056 | 0.068 | 0.090 | 0.113 | 0.141 |
| | | | | 23 - 35 | $v_f$ (m/min) | 312 | 311 | 312 | 313 | 311 | 312 |
| | E 14 - 15 | 1.50 | 0.25 | 20 | n (rev/min) | 1060 | 640 | 530 | 400 | 320 | 250 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.088 | 0.109 |
| | | | | 14 - 26 | $v_f$ (m/min) | 167 | 168 | 167 | 168 | 168 | 164 |
| N | E 18 | 1.50 | 0.25 | 107 | n (rev/min) | 5680 | 3410 | 2840 | 2130 | 1700 | 1360 |
| | | | | | $f_z$ (mm) | 0.038 | 0.063 | 0.075 | 0.100 | 0.125 | 0.156 |
| | | | | 91 - 122 | $v_f$ (m/min) | 1278 | 1279 | 1278 | 1278 | 1275 | 1275 |
| S | E 20 | 1.50 | 0.25 | 3 | n (rev/min) | 160 | 100 | 80 | 60 | 50 | 40 |
| | | | | | $f_z$ (mm) | 0.015 | 0.025 | 0.030 | 0.040 | 0.050 | 0.063 |
| | | | | 2 - 4 | $v_f$ (m/min) | 14 | 15 | 14 | 14 | 15 | 15 |
| | E 21 | 1.50 | 0.25 | 4 | n (rev/min) | 210 | 130 | 110 | 80 | 60 | 50 |
| | | | | | $f_z$ (mm) | 0.019 | 0.031 | 0.038 | 0.050 | 0.063 | 0.078 |
| | | | | 3 - 4 | $v_f$ (m/min) | 24 | 24 | 25 | 24 | 23 | 23 |
| | E 22 | 1.50 | 0.25 | 18 | n (rev/min) | 950 | 570 | 480 | 360 | 290 | 230 |
| | | | | | $f_z$ (mm) | 0.026 | 0.044 | 0.053 | 0.070 | 0.088 | 0.109 |
| | | | | 12 - 24 | $v_f$ (m/min) | 150 | 150 | 151 | 151 | 152 | 151 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

RTM713

| SLOTTING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 3$ 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 |
| P | E 1 - 2 | 1.00 | 1.00 | 132 | n (rev/min) | 2017 | 1345 | 1008 | 807 | 672 | 504 | 403 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 |
| | | | | 102 - 162 | $v_f$ (in/min) | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 |
| | E 3 - 4 | 1.00 | 1.00 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 |
| | | | | 50 - 70 | $v_f$ (in/min) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| K | E 12 - 13 | 1.00 | 1.00 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 |
| | | | | 50 - 70 | $v_f$ (in/min) | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| N | E 18 | 1.00 | 1.00 | 288 | n (rev/min) | 4401 | 2934 | 2200 | 1760 | 1467 | 1100 | 880 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 |
| | | | | 248 - 328 | $v_f$ (in/min) | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | E 1 - 2 | 1.50 | 0.25 | 192 | n (rev/min) | 2934 | 1956 | 1467 | 1174 | 978 | 733 | 587 |
| | | | | | $f_z$ (in) | 0.0018 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 | 0.0088 |
| | | | | 152 - 232 | $v_f$ (in/min) | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 |
| | E 3 - 4 | 1.50 | 0.25 | 96 | n (rev/min) | 1467 | 978 | 733 | 587 | 489 | 367 | 293 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 |
| | | | | 76 - 116 | $v_f$ (in/min) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| K | E 12 - 13 | 1.50 | 0.25 | 114 | n (rev/min) | 1742 | 1161 | 871 | 697 | 581 | 435 | 348 |
| | | | | | $f_z$ (in) | 0.0018 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 | 0.0088 |
| | | | | 94 - 134 | $v_f$ (in/min) | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 |
| N | E 18 | 1.50 | 0.25 | 420 | n (rev/min) | 6418 | 4278 | 3209 | 2567 | 2139 | 1604 | 1284 |
| | | | | | $f_z$ (in) | 0.0020 | 0.0029 | 0.0039 | 0.0049 | 0.0059 | 0.0078 | 0.0098 |
| | | | | 370 - 470 | $v_f$ (in/min) | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

RHC752

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 3$ | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| N | E 16 | 1.00 | 1.00 | 600 | n (rev/min) | 9168 | 6112 | 4584 | 3667 | 3056 | 2292 | 1834 | 1528 | 1310 | 1146 |
| | | | | | $f_z$ (in) | 0.0031 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0125 | 0.0156 | 0.0188 | 0.0219 | 0.0250 |
| | | | | 300 - 900 | $v_f$ (in/min) | 86.0 | 86.0 | 86.0 | 85.9 | 86.0 | 86.0 | 86.0 | 86.0 | 86.0 | 86.0 |
| | E 17 | 1.00 | 1.00 | 600 | n (rev/min) | 9168 | 6112 | 4584 | 3667 | 3056 | 2292 | 1834 | 1528 | 1310 | 1146 |
| | | | | | $f_z$ (in) | 0.0031 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0125 | 0.0156 | 0.0188 | 0.0219 | 0.0250 |
| | | | | 300 - 900 | $v_f$ (in/min) | 86.0 | 86.0 | 86.0 | 85.9 | 86.0 | 86.0 | 86.0 | 86.0 | 86.0 | 86.0 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | E 16 | 1.50 | 0.25 | 900 | n (rev/min) | 13752 | 9168 | 6876 | 5501 | 4584 | 3438 | 2750 | 2292 | 1965 | 1719 |
| | | | | | $f_z$ (in) | 0.0039 | 0.0059 | 0.0078 | 0.0098 | 0.0117 | 0.0156 | 0.0195 | 0.0234 | 0.0273 | 0.0313 |
| | | | | 600 - 1200 | $v_f$ (in/min) | 161.2 | 161.2 | 161.2 | 161.2 | 161.2 | 161.2 | 161.1 | 161.2 | 161.2 | 161.2 |
| | E 17 | 1.50 | 0.25 | 900 | n (rev/min) | 13752 | 9168 | 6876 | 5501 | 4584 | 3438 | 2750 | 2292 | 1965 | 1719 |
| | | | | | $f_z$ (in) | 0.0039 | 0.0059 | 0.0078 | 0.0098 | 0.0117 | 0.0156 | 0.0195 | 0.0234 | 0.0273 | 0.0313 |
| | | | | 600 - 1200 | $v_f$ (in/min) | 161.2 | 161.2 | 161.2 | 161.2 | 161.2 | 161.2 | 161.1 | 161.2 | 161.2 | 161.2 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

RHLC754

| SLOTTING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 3$ | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| N | E 16 | 1.00 | 1.00 | 500 | n (rev/min) | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 | 1528 | 1273 | 1091 | 955 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 | 0.0150 | 0.0175 | 0.0200 |
| | | | | 200 - 800 | $v_f$ (in/min) | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 |
| | E 17 | 1.00 | 1.00 | 500 | n (rev/min) | 7640 | 5093 | 3820 | 3056 | 2547 | 1910 | 1528 | 1273 | 1091 | 955 |
| | | | | | $f_z$ (in) | 0.0025 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0100 | 0.0125 | 0.0150 | 0.0175 | 0.0200 |
| | | | | 200 - 800 | $v_f$ (in/min) | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 | 57.3 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | E 16 | 1.50 | 0.25 | 750 | n (rev/min) | 11460 | 7640 | 5730 | 4584 | 3820 | 2865 | 2292 | 1910 | 1637 | 1433 |
| | | | | | $f_z$ (in) | 0.0031 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0125 | 0.0156 | 0.0188 | 0.0219 | 0.0250 |
| | | | | 450 - 1050 | $v_f$ (in/min) | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.5 |
| | E 17 | 1.50 | 0.25 | 750 | n (rev/min) | 11460 | 7640 | 5730 | 4584 | 3820 | 2865 | 2292 | 1910 | 1637 | 1433 |
| | | | | | $f_z$ (in) | 0.0031 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0125 | 0.0156 | 0.0188 | 0.0219 | 0.0250 |
| | | | | 450 - 1050 | $v_f$ (in/min) | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.4 | 107.5 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

RTM447

| SLOTTING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 3$ 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 |
| P | E 5 - 6 | 1.00 | 1.00 | 42 | n (rev/min) | 642 | 428 | 321 | 257 | 214 | 160 | 128 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 |
| | | | | 32 - 52 | $v_f$ (in/min) | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| M | E 8 - 9 | 1.00 | 1.00 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 |
| | | | | 50 - 70 | $v_f$ (in/min) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| | E 10 - 11 | 1.00 | 1.00 | 48 | n (rev/min) | 733 | 489 | 367 | 293 | 244 | 183 | 147 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 |
| | | | | 38 - 58 | $v_f$ (in/min) | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| K | E 14 - 15 | 1.00 | 1.00 | 48 | n (rev/min) | 733 | 489 | 367 | 293 | 244 | 183 | 147 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 |
| | | | | 38 - 58 | $v_f$ (in/min) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| S | E 20 | 1.00 | 1.00 | 9.6 | n (rev/min) | 147 | 98 | 73 | 59 | 49 | 37 | 29 |
| | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0019 | 0.0023 |
| | | | | 7.6 - 11.6 | $v_f$ (in/min) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | E 21 | 1.00 | 1.00 | 9.6 | n (rev/min) | 147 | 98 | 73 | 59 | 49 | 37 | 29 |
| | | | | | $f_z$ (in) | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0031 | 0.0039 |
| | | | | 7.6 - 11.6 | $v_f$ (in/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | E 22 | 1.00 | 1.00 | 48 | n (rev/min) | 733 | 489 | 367 | 293 | 244 | 183 | 147 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 |
| | | | | 38 - 58 | $v_f$ (in/min) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

RTM447

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 3$ | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 |
| P | E 5 - 6 | 1.50 | 0.25 | 63 | | n (rev/min) | 955 | 637 | 478 | 382 | 318 | 239 | 191 |
| | | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 |
| | | | | 53 | - 73 | $v_f$ (in/min) | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| M | E 8 - 9 | 1.50 | 0.25 | 96 | | n (rev/min) | 1467 | 978 | 733 | 587 | 489 | 367 | 293 |
| | | | | | | $f_z$ (in) | 0.0014 | 0.0018 | 0.0023 | 0.0029 | 0.0035 | 0.0047 | 0.0059 |
| | | | | 86 | - 106 | $v_f$ (in/min) | 6.0 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 |
| | E 10 - 11 | 1.50 | 0.25 | 72 | | n (rev/min) | 1100 | 733 | 550 | 440 | 367 | 275 | 220 |
| | | | | | | $f_z$ (in) | 0.0012 | 0.0018 | 0.0023 | 0.0029 | 0.0035 | 0.0047 | 0.0059 |
| | | | | 62 | - 82 | $v_f$ (in/min) | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| K | E 14 - 15 | 1.50 | 0.25 | 78 | | n (rev/min) | 1192 | 795 | 596 | 477 | 397 | 298 | 238 |
| | | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 |
| | | | | 68 | - 88 | $v_f$ (in/min) | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 |
| S | E 20 | 1.50 | 0.25 | 12 | | n (rev/min) | 183 | 122 | 92 | 73 | 61 | 46 | 37 |
| | | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0023 | 0.0029 |
| | | | | 10 | - 14 | $v_f$ (in/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | E 21 | 1.50 | 0.25 | 14 | | n (rev/min) | 220 | 147 | 110 | 88 | 73 | 55 | 44 |
| | | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0024 | 0.0029 | 0.0039 | 0.0049 |
| | | | | 12 | - 16 | $v_f$ (in/min) | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| | E 22 | 1.50 | 0.25 | 72 | | n (rev/min) | 1100 | 733 | 550 | 440 | 367 | 275 | 220 |
| | | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 |
| | | | | 62 | - 82 | $v_f$ (in/min) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

**REM710 / REC700 / RMB700**

| SLOTTING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | $Z_n = 5$ 1 | $Z_n = 6$ 1 1/4 | 1 1/2 | 1 3/4 |
| P | E 1 - 2 | 1.00 | 1.00 | 132 | n (rev/min) | 2017 | 1345 | 1008 | 807 | 672 | 504 | 403 | 336 | 288 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 |
| | | | | 102 - 162 | $v_f$ (in/min) | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 14.2 | 17.0 | 17.0 | 17.0 |
| | E 3 - 4 | 1.00 | 1.00 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 |
| | | | | 50 - 70 | $v_f$ (in/min) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| K | E 12 - 13 | 1.00 | 1.00 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 |
| | | | | 50 - 70 | $v_f$ (in/min) | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 6.4 | 7.7 | 7.7 | 7.7 |
| N | E 18 | 1.00 | 1.00 | 288 | n (rev/min) | 4401 | 2934 | 2200 | 1760 | 1467 | 1100 | 880 | 733 | 629 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 |
| | | | | 248 - 328 | $v_f$ (in/min) | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 34.4 | 41.3 | 41.3 | 41.3 |

**REM710 / REC700 / RMB700**

| SLOTTING | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 8$ 2 | 2 1/2 | $Z_n = 10$ 3 |
| P | E 1 - 2 | 0.50 | 1.00 | 132 | n (rev/min) | 252 | 202 | 168 |
| | | | | | $f_z$ (in) | 0.0113 | 0.0141 | 0.0169 |
| | | | | 102 - 162 | $v_f$ (in/min) | 22.7 | 22.7 | 28.4 |
| | E 3 - 4 | 0.50 | 1.00 | 60 | n (rev/min) | 115 | 92 | 76 |
| | | | | | $f_z$ (in) | 0.0088 | 0.0109 | 0.0131 |
| | | | | 50 - 70 | $v_f$ (in/min) | 8.0 | 8.0 | 10.0 |
| K | E 12 - 13 | 0.50 | 1.00 | 60 | n (rev/min) | 115 | 92 | 76 |
| | | | | | $f_z$ (in) | 0.0113 | 0.0141 | 0.0169 |
| | | | | 50 - 70 | $v_f$ (in/min) | 10.3 | 10.3 | 12.9 |
| N | E 18 | 0.50 | 1.00 | 288 | n (rev/min) | 550 | 440 | 367 |
| | | | | | $f_z$ (in) | 0.0125 | 0.0156 | 0.0188 |
| | | | | 248 - 328 | $v_f$ (in/min) | 55.0 | 55.0 | 68.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

**REM710 / REC700 / RMB700**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ | | | | | $Z_n = 5$ | $Z_n = 6$ | | | $Z_n = 8$ | | $Z_n = 10$ |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 | 2 1/2 | 3 |
| P | E 1 - 2 | 1.50 | 0.25 | 192 | n (rev/min) | 2934 | 1956 | 1467 | 1174 | 978 | 733 | 587 | 489 | 419 | 367 | 293 | 244 |
| | | | | | $f_z$ (in) | 0.0018 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 | 0.0088 | 0.0105 | 0.0123 | 0.0141 | 0.0176 | 0.0211 |
| | | | | 152 - 232 | $v_f$ (in/min) | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 25.8 | 30.9 | 30.9 | 30.9 | 41.3 | 41.3 | 51.6 |
| | E 3 - 4 | 1.50 | 0.25 | 96 | n (rev/min) | 1467 | 978 | 733 | 587 | 489 | 367 | 293 | 244 | 210 | 183 | 147 | 122 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 | 0.0082 | 0.0096 | 0.0109 | 0.0137 | 0.0164 |
| | | | | 76 - 116 | $v_f$ (in/min) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 12.0 | 12.0 | 12.0 | 16.0 | 16.0 | 20.1 |
| K | E 12 - 13 | 1.50 | 0.25 | 114 | n (rev/min) | 1742 | 1161 | 871 | 697 | 581 | 435 | 348 | 290 | 249 | 218 | 174 | 145 |
| | | | | | $f_z$ (in) | 0.0018 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 | 0.0088 | 0.0105 | 0.0123 | 0.0141 | 0.0176 | 0.0211 |
| | | | | 94 - 134 | $v_f$ (in/min) | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 15.3 | 18.4 | 18.4 | 18.4 | 24.5 | 24.5 | 30.6 |
| N | E 18 | 1.50 | 0.25 | 420 | n (rev/min) | 6418 | 4278 | 3209 | 2567 | 2139 | 1604 | 1284 | 1070 | 917 | 802 | 642 | 535 |
| | | | | | $f_z$ (in) | 0.0020 | 0.0029 | 0.0039 | 0.0049 | 0.0059 | 0.0078 | 0.0098 | 0.0117 | 0.0137 | 0.0156 | 0.0195 | 0.0234 |
| | | | | 370 - 470 | $v_f$ (in/min) | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 62.7 | 75.2 | 75.2 | 75.2 | 100.3 | 100.3 | 125.3 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

RXC753

| SLOTTING | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 5$ | $Z_n = 6$ | | |
| | | | | | | 1 | 1 1/4 | 1 1/2 |
| P | E 1 - 2 | 1.00 | 1.00 | 110 | n (rev/min) | 420 | 336 | 280 |
| | | | | | $f_z$ (in) | 0.0045 | 0.0056 | 0.0068 |
| | | | | 80 - 140 | $v_f$ (in/min) | 9.5 | 11.3 | 11.3 |
| | E 3 - 4 | 1.00 | 1.00 | 50 | n (rev/min) | 191 | 153 | 127 |
| | | | | | $f_z$ (in) | 0.0035 | 0.0044 | 0.0053 |
| | | | | 40 - 60 | $v_f$ (in/min) | 3.3 | 4.0 | 4.0 |
| K | E 12 - 13 | 1.00 | 1.00 | 50 | n (rev/min) | 191 | 153 | 127 |
| | | | | | $f_z$ (in) | 0.0045 | 0.0056 | 0.0068 |
| | | | | 40 - 60 | $v_f$ (in/min) | 4.3 | 5.2 | 5.2 |
| N | E 18 | 1.00 | 1.00 | 240 | n (rev/min) | 917 | 733 | 611 |
| | | | | | $f_z$ (in) | 0.0050 | 0.0063 | 0.0075 |
| | | | | 200 - 280 | $v_f$ (in/min) | 22.9 | 27.5 | 27.5 |

RXC753

| SLOTTING | | | | | | | |
|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 8$ |
| | | | | | | 2 |
| P | E 1 - 2 | 0.50 | 1.00 | 110 | n (rev/min) | 210 |
| | | | | | $f_z$ (in) | 0.0090 |
| | | | | 80 - 140 | $v_f$ (in/min) | 15.1 |
| | E 3 - 4 | 0.50 | 1.00 | 50 | n (rev/min) | 96 |
| | | | | | $f_z$ (in) | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 5.3 |
| K | E 12 - 13 | 0.50 | 1.00 | 50 | n (rev/min) | 96 |
| | | | | | $f_z$ (in) | 0.0090 |
| | | | | 40 - 60 | $v_f$ (in/min) | 6.9 |
| N | E 18 | 0.50 | 1.00 | 240 | n (rev/min) | 458 |
| | | | | | $f_z$ (in) | 0.0100 |
| | | | | 200 - 280 | $v_f$ (in/min) | 36.7 |

RXC753

| SIDE MILLING - ROUGHING | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 5$ | $Z_n = 6$ | | $Z_n = 8$ |
| | | | | | | 1 | 1 1/4 | 1 1/2 | 2 |
| P | E 1 - 2 | 1.50 | 0.25 | 192 | n (rev/min) | 733 | 587 | 489 | 367 |
| | | | | | $f_z$ (in) | 0.0056 | 0.0070 | 0.0084 | 0.0113 |
| | | | | 152 - 232 | $v_f$ (in/min) | 20.6 | 24.8 | 24.8 | 33.0 |
| | E 3 - 4 | 1.50 | 0.25 | 96 | n (rev/min) | 367 | 293 | 244 | 183 |
| | | | | | $f_z$ (in) | 0.0044 | 0.0055 | 0.0066 | 0.0088 |
| | | | | 76 - 116 | $v_f$ (in/min) | 8.0 | 9.6 | 9.6 | 12.8 |
| K | E 12 - 13 | 1.50 | 0.25 | 114 | n (rev/min) | 435 | 348 | 290 | 218 |
| | | | | | $f_z$ (in) | 0.0056 | 0.0070 | 0.0084 | 0.0113 |
| | | | | 94 - 134 | $v_f$ (in/min) | 12.2 | 14.7 | 14.7 | 19.6 |
| N | E 18 | 1.50 | 0.25 | 420 | n (rev/min) | 1604 | 1284 | 1070 | 802 |
| | | | | | $f_z$ (in) | 0.0063 | 0.0078 | 0.0094 | 0.0125 |
| | | | | 370 - 470 | $v_f$ (in/min) | 50.1 | 60.2 | 60.2 | 80.2 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**EXR350**

| SLOTTING | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ 3/8 | 1/2 | 5/8 | 3/4 | $Z_n = 5$ 1 | $Z_n = 6$ 1 1/4 | 1 1/2 |
| M | E 8 - 9 | 1.00 | 1.00 | 96 | n (rev/min) | 978 | 733 | 587 | 489 | 367 | 293 | 244 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 |
| | | | | 86 - 106 | $v_f$ (in/min) | 5.5 | 5.5 | 5.5 | 5.5 | 6.9 | 8.3 | 8.3 |
| | E 10 - 11 | 1.00 | 1.00 | 72 | n (rev/min) | 733 | 550 | 440 | 367 | 275 | 220 | 183 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 |
| | | | | 62 - 82 | $v_f$ (in/min) | 4.1 | 4.1 | 4.1 | 4.1 | 5.2 | 6.2 | 6.2 |
| S | E 20 | 1.00 | 1.00 | 10 | n (rev/min) | 98 | 73 | 59 | 49 | 37 | 29 | 24 |
| | | | | | $f_z$ (in) | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0019 | 0.0023 | 0.0028 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 |
| | E 21 | 1.00 | 1.00 | 10 | n (rev/min) | 98 | 73 | 59 | 49 | 37 | 29 | 24 |
| | | | | | $f_z$ (in) | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0031 | 0.0039 | 0.0047 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 |
| | E 22 | 1.00 | 1.00 | 48 | n (rev/min) | 489 | 367 | 293 | 244 | 183 | 147 | 122 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 |
| | | | | 38 - 58 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 4.0 | 4.8 | 4.8 |

**EXR350**

| SLOTTING | | | | | | |
|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 8$ 2 |
| M | E 8 - 9 | 0.50 | 1.00 | 96 | n (rev/min) | 183 |
| | | | | | $f_z$ (in) | 0.0075 |
| | | | | 86 - 106 | $v_f$ (in/min) | 11.0 |
| | E 10 - 11 | 0.50 | 1.00 | 72 | n (rev/min) | 138 |
| | | | | | $f_z$ (in) | 0.0075 |
| | | | | 62 - 82 | $v_f$ (in/min) | 8.3 |
| S | E 20 | 0.50 | 1.00 | 10 | n (rev/min) | 18 |
| | | | | | $f_z$ (in) | 0.0038 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.6 |
| | E 21 | 0.50 | 1.00 | 10 | n (rev/min) | 18 |
| | | | | | $f_z$ (in) | 0.0063 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.9 |
| | E 22 | 0.50 | 1.00 | 48 | n (rev/min) | 92 |
| | | | | | $f_z$ (in) | 0.0088 |
| | | | | 38 - 58 | $v_f$ (in/min) | 6.4 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**EXR350**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | | $Z_n = 5$ | $Z_n = 6$ | | $Z_n = 8$ |
| | | | | | | | | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 |
| M | E 8 - 9 | 1.50 | 0.25 | | 115 | | n (rev/min) | 1174 | 880 | 704 | 587 | 440 | 352 | 293 | 220 |
| | | | | | | | $f_z$ (in) | 0.0018 | 0.0023 | 0.0029 | 0.0035 | 0.0047 | 0.0059 | 0.0070 | 0.0094 |
| | | | | 105 | - | 125 | $v_f$ (in/min) | 8.3 | 8.3 | 8.3 | 8.3 | 10.3 | 12.4 | 12.4 | 16.5 |
| | E 10 - 11 | 1.50 | 0.25 | | 86 | | n (rev/min) | 880 | 660 | 528 | 440 | 330 | 264 | 220 | 165 |
| | | | | | | | $f_z$ (in) | 0.0018 | 0.0023 | 0.0029 | 0.0035 | 0.0047 | 0.0059 | 0.0070 | 0.0094 |
| | | | | 76 | - | 96 | $v_f$ (in/min) | 6.2 | 6.2 | 6.2 | 6.2 | 7.7 | 9.3 | 9.3 | 12.4 |
| S | E 20 | 1.50 | 0.25 | | 12 | | n (rev/min) | 122 | 92 | 73 | 61 | 46 | 37 | 31 | 23 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0023 | 0.0029 | 0.0035 | 0.0047 |
| | | | | 10 | - | 14 | $v_f$ (in/min) | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.6 | 0.6 | 0.9 |
| | E 21 | 1.50 | 0.25 | | 12 | | n (rev/min) | 122 | 92 | 73 | 61 | 46 | 37 | 31 | 23 |
| | | | | | | | $f_z$ (in) | 0.0015 | 0.0020 | 0.0024 | 0.0029 | 0.0039 | 0.0049 | 0.0059 | 0.0078 |
| | | | | 10 | - | 14 | $v_f$ (in/min) | 0.7 | 0.7 | 0.7 | 0.7 | 0.9 | 1.1 | 1.1 | 1.4 |
| | E 22 | 1.50 | 0.25 | | 57.6 | | n (rev/min) | 587 | 440 | 352 | 293 | 220 | 176 | 147 | 110 |
| | | | | | | | $f_z$ (in) | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 | 0.0082 | 0.0109 |
| | | | | 47.6 | - | 67.6 | $v_f$ (in/min) | 4.8 | 4.8 | 4.8 | 4.8 | 6.0 | 7.2 | 7.2 | 9.6 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**REM445 / REC448 / RMB449**

| | | | | | | | | SLOTTING | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (sf / min) | | | $Z_n = 4$ | | | | | $Z_n = 5$ | $Z_n = 6$ | | |
| | | | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 |
| P | E 5 - 6 | 1.00 | 1.00 | | 42 | | n (rev/min) | 642 | 428 | 321 | 257 | 214 | 160 | 128 | 107 | 92 |
| | | | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 |
| | | | | 32 | - | 52 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 3.5 | 4.2 | 4.2 | 4.2 |
| M | E 8 - 9 | 1.00 | 1.00 | | 96 | | n (rev/min) | 1467 | 978 | 733 | 587 | 489 | 367 | 293 | 244 | 210 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 | 0.0066 |
| | | | | 86 | - | 106 | $v_f$ (in/min) | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 6.9 | 8.3 | 8.3 | 8.3 |
| | E 10 - 11 | 1.00 | 1.00 | | 72 | | n (rev/min) | 1100 | 733 | 550 | 440 | 367 | 275 | 220 | 183 | 157 |
| | | | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 | 0.0066 |
| | | | | 62 | - | 82 | $v_f$ (in/min) | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 5.2 | 6.2 | 6.2 | 6.2 |
| S | E 20 | 1.00 | 1.00 | | 9.6 | | n (rev/min) | 147 | 98 | 73 | 59 | 49 | 37 | 29 | 24 | 21 |
| | | | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0033 |
| | | | | 7.6 | - | 11.6 | $v_f$ (in/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 |
| | E 21 | 1.00 | 1.00 | | 9.6 | | n (rev/min) | 147 | 98 | 73 | 59 | 49 | 37 | 29 | 24 | 21 |
| | | | | | | | $f_z$ (in) | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0055 |
| | | | | 7.6 | - | 11.6 | $v_f$ (in/min) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 | 0.7 |
| | E 22 | 1.00 | 1.00 | | 48 | | n (rev/min) | 733 | 489 | 367 | 293 | 244 | 183 | 147 | 122 | 105 |
| | | | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 |
| | | | | 38 | - | 58 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 4.0 | 4.8 | 4.8 | 4.8 |

**REM445 / REC448 / RMB449**

| | | | | | | | | SLOTTING | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | | $v_c$ (sf / min) | | | $Z_n = 8$ | | $Z_n = 10$ |
| | | | | | | | | 2 | 2 1/2 | 3 |
| P | E 5 - 6 | 0.50 | 1.00 | | 42 | | n (rev/min) | 80 | 64 | 53 |
| | | | | | | | $f_z$ (in) | 0.0088 | 0.0109 | 0.0131 |
| | | | | 32 | - | 52 | $v_f$ (in/min) | 5.6 | 5.6 | 7.0 |
| M | E 8 - 9 | 0.50 | 1.00 | | 96 | | n (rev/min) | 183 | 147 | 122 |
| | | | | | | | $f_z$ (in) | 0.0075 | 0.0094 | 0.0113 |
| | | | | 86 | - | 106 | $v_f$ (in/min) | 11.0 | 11.0 | 13.8 |
| | E 10 - 11 | 0.50 | 1.00 | | 72 | | n (rev/min) | 138 | 110 | 92 |
| | | | | | | | $f_z$ (in) | 0.0075 | 0.0094 | 0.0113 |
| | | | | 62 | - | 82 | $v_f$ (in/min) | 8.3 | 8.3 | 10.3 |
| S | E 20 | 0.50 | 1.00 | | 9.6 | | n (rev/min) | 18 | 15 | 12 |
| | | | | | | | $f_z$ (in) | 0.0038 | 0.0047 | 0.0056 |
| | | | | 7.6 | - | 11.6 | $v_f$ (in/min) | 0.6 | 0.6 | 0.7 |
| | E 21 | 0.50 | 1.00 | | 9.6 | | n (rev/min) | 18 | 15 | 12 |
| | | | | | | | $f_z$ (in) | 0.0063 | 0.0078 | 0.0094 |
| | | | | 7.6 | - | 11.6 | $v_f$ (in/min) | 0.9 | 0.9 | 1.1 |
| | E 22 | 0.50 | 1.00 | | 48 | | n (rev/min) | 92 | 73 | 61 |
| | | | | | | | $f_z$ (in) | 0.0088 | 0.0109 | 0.0131 |
| | | | | 38 | - | 58 | $v_f$ (in/min) | 6.4 | 6.4 | 8.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

**REM445 / REC448 / RMB449**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | $Z_n = 5$ | $Z_n = 6$ | | | $Z_n = 8$ | | $Z_n = 10$ |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 | 2 1/2 | 3 |
| P | E 5 - 6 | 1.50 | 0.25 | 63 | n (rev/min) | 955 | 637 | 478 | 382 | 318 | 239 | 191 | 159 | 136 | 119 | 96 | 80 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 | 0.0082 | 0.0096 | 0.0109 | 0.0137 | 0.0164 |
| | | | | 53 - 73 | $v_f$ (in/min) | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 6.5 | 7.8 | 7.8 | 7.8 | 10.4 | 10.4 | 13.1 |
| M | E 8 - 9 | 1.50 | 0.25 | 115 | n (rev/min) | 1760 | 1174 | 880 | 704 | 587 | 440 | 352 | 293 | 251 | 220 | 176 | 147 |
| | | | | | $f_z$ (in) | 0.0012 | 0.0018 | 0.0023 | 0.0029 | 0.0035 | 0.0047 | 0.0059 | 0.0070 | 0.0082 | 0.0094 | 0.0117 | 0.0141 |
| | | | | 105 - 125 | $v_f$ (in/min) | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 10.3 | 12.4 | 12.4 | 12.4 | 16.5 | 16.5 | 20.6 |
| | E 10 - 11 | 1.50 | 0.25 | 86 | n (rev/min) | 1320 | 880 | 660 | 528 | 440 | 330 | 264 | 220 | 189 | 165 | 132 | 110 |
| | | | | | $f_z$ (in) | 0.0012 | 0.0018 | 0.0023 | 0.0029 | 0.0035 | 0.0047 | 0.0059 | 0.0070 | 0.0082 | 0.0094 | 0.0117 | 0.0141 |
| | | | | 76 - 96 | $v_f$ (in/min) | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 7.7 | 9.3 | 9.3 | 9.3 | 12.4 | 12.4 | 15.5 |
| S | E 20 | 1.50 | 0.25 | 12 | n (rev/min) | 183 | 122 | 92 | 73 | 61 | 46 | 37 | 31 | 26 | 23 | 18 | 15 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0023 | 0.0029 | 0.0035 | 0.0041 | 0.0047 | 0.0059 | 0.0070 |
| | | | | 10 - 14 | $v_f$ (in/min) | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.6 | 0.6 | 0.6 | 0.9 | 0.9 | 1.1 |
| | E 21 | 1.50 | 0.25 | 14 | n (rev/min) | 220 | 147 | 110 | 88 | 73 | 55 | 44 | 37 | 31 | 28 | 22 | 18 |
| | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0024 | 0.0029 | 0.0039 | 0.0049 | 0.0059 | 0.0068 | 0.0078 | 0.0098 | 0.0117 |
| | | | | 12 - 16 | $v_f$ (in/min) | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.1 | 1.3 | 1.3 | 1.3 | 1.7 | 1.7 | 2.1 |
| | E 22 | 1.50 | 0.25 | 72 | n (rev/min) | 1100 | 733 | 550 | 440 | 367 | 275 | 220 | 183 | 157 | 138 | 110 | 92 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 | 0.0082 | 0.0096 | 0.0109 | 0.0137 | 0.0164 |
| | | | | 62 - 82 | $v_f$ (in/min) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 7.5 | 9.0 | 9.0 | 9.0 | 12.0 | 12.0 | 15.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**RFM440 / RFM441**

| SLOTTING | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ | | | | | $Z_n = 5$ | $Z_n = 6$ | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 |
| P | E 1 - 2 | 1.00 | 1.00 | 132 | n (rev/min) | 2017 | 1345 | 1008 | 807 | 672 | 504 | 403 | 336 | 288 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 |
| | | | | 122 - 142 | $v_f$ (in/min) | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 14.2 | 17.0 | 17.0 | 17.0 |
| | E 3 - 4 | 1.00 | 1.00 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 |
| | | | | 50 - 70 | $v_f$ (in/min) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| | E 5 - 6 | 1.00 | 1.00 | 42 | n (rev/min) | 642 | 428 | 321 | 257 | 214 | 160 | 128 | 107 | 92 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 |
| | | | | 32 - 52 | $v_f$ (in/min) | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 3.5 | 4.2 | 4.2 | 4.2 |
| M | E 8 - 9 | 1.00 | 1.00 | 96 | n (rev/min) | 1467 | 978 | 733 | 587 | 489 | 367 | 293 | 244 | 210 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 | 0.0066 |
| | | | | 86 - 106 | $v_f$ (in/min) | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 6.9 | 8.3 | 8.3 | 8.3 |
| | E 10 - 11 | 1.00 | 1.00 | 72 | n (rev/min) | 1100 | 733 | 550 | 440 | 367 | 275 | 220 | 183 | 157 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 | 0.0066 |
| | | | | 62 - 82 | $v_f$ (in/min) | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 5.2 | 6.2 | 6.2 | 6.2 |
| K | E 12 - 13 | 1.00 | 1.00 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 |
| | | | | 50 - 70 | $v_f$ (in/min) | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 6.4 | 7.7 | 7.7 | 7.7 |
| | E 14 - 15 | 1.00 | 1.00 | 48 | n (rev/min) | 733 | 489 | 367 | 293 | 244 | 183 | 147 | 122 | 105 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 |
| | | | | 38 - 58 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 4.0 | 4.8 | 4.8 | 4.8 |
| N | E 18 | 1.00 | 1.00 | 288 | n (rev/min) | 4401 | 2934 | 2200 | 1760 | 1467 | 1100 | 880 | 733 | 629 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 |
| | | | | 286 - 290 | $v_f$ (in/min) | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 34.4 | 41.3 | 41.3 | 41.3 |
| S | E 20 | 1.00 | 1.00 | 10 | n (rev/min) | 147 | 98 | 73 | 59 | 49 | 37 | 29 | 24 | 21 |
| | | | | | $f_z$ (in) | 0.0005 | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0033 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 |
| | E 21 | 1.00 | 1.00 | 10 | n (rev/min) | 147 | 98 | 73 | 59 | 49 | 37 | 29 | 24 | 21 |
| | | | | | $f_z$ (in) | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0055 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 | 0.7 |
| | E 22 | 1.00 | 1.00 | 48 | n (rev/min) | 733 | 489 | 367 | 293 | 244 | 183 | 147 | 122 | 105 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 |
| | | | | 38 - 58 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 4.0 | 4.8 | 4.8 | 4.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**RFM440 / RFM441**

| SLOTTING | | | | | | |
|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 8$ 2 |
| P | E 1 - 2 | 0.50 | 1.00 | 132 | n (rev/min) | 252 |
| | | | | | $f_z$ (in) | 0.0113 |
| | | | | 122 - 142 | $v_f$ (in/min) | 22.7 |
| | E 3 - 4 | 0.50 | 1.00 | 60 | n (rev/min) | 115 |
| | | | | | $f_z$ (in) | 0.0088 |
| | | | | 50 - 70 | $v_f$ (in/min) | 8.0 |
| | E 5 - 6 | 0.50 | 1.00 | 42 | n (rev/min) | 80 |
| | | | | | $f_z$ (in) | 0.0088 |
| | | | | 32 - 52 | $v_f$ (in/min) | 5.6 |
| M | E 8 - 9 | 0.50 | 1.00 | 96 | n (rev/min) | 183 |
| | | | | | $f_z$ (in) | 0.0075 |
| | | | | 86 - 106 | $v_f$ (in/min) | 11.0 |
| | E 10 - 11 | 0.50 | 1.00 | 72 | n (rev/min) | 138 |
| | | | | | $f_z$ (in) | 0.0075 |
| | | | | 62 - 82 | $v_f$ (in/min) | 8.3 |
| K | E 12 - 13 | 0.50 | 1.00 | 60 | n (rev/min) | 115 |
| | | | | | $f_z$ (in) | 0.0113 |
| | | | | 50 - 70 | $v_f$ (in/min) | 10.3 |
| | E 14 - 15 | 0.50 | 1.00 | 48 | n (rev/min) | 92 |
| | | | | | $f_z$ (in) | 0.0088 |
| | | | | 38 - 58 | $v_f$ (in/min) | 6.4 |
| N | E 18 | 0.50 | 1.00 | 288 | n (rev/min) | 550 |
| | | | | | $f_z$ (in) | 0.0125 |
| | | | | 286 - 290 | $v_f$ (in/min) | 55.0 |
| S | E 20 | 0.50 | 1.00 | 10 | n (rev/min) | 18 |
| | | | | | $f_z$ (in) | 0.0038 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.6 |
| | E 21 | 0.50 | 1.00 | 10 | n (rev/min) | 18 |
| | | | | | $f_z$ (in) | 0.0063 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.9 |
| | E 22 | 0.50 | 1.00 | 48 | n (rev/min) | 92 |
| | | | | | $f_z$ (in) | 0.0088 |
| | | | | 38 - 58 | $v_f$ (in/min) | 6.4 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

**RFM440 / RFM441**

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | | | $Z_n = 4$ | | | | $Z_n = 5$ | $Z_n = 6$ | | | $Z_n = 8$ |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.50 | 0.25 | 192 | n (rev/min) | 2934 | 1956 | 1467 | 1174 | 978 | 733 | 587 | 489 | 419 | 367 |
| | | | | | $f_z$ (in) | 0.0018 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 | 0.0088 | 0.0105 | 0.0123 | 0.0141 |
| | | | | 152 - 232 | $v_f$ (in/min) | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 25.8 | 30.9 | 30.9 | 30.9 | 41.3 |
| | E 3 - 4 | 1.50 | 0.25 | 96 | n (rev/min) | 1467 | 978 | 733 | 587 | 489 | 367 | 293 | 244 | 210 | 183 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 | 0.0082 | 0.0096 | 0.0109 |
| | | | | 76 - 116 | $v_f$ (in/min) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 12.0 | 12.0 | 12.0 | 16.0 |
| | E 5 - 6 | 1.50 | 0.25 | 63 | n (rev/min) | 955 | 637 | 478 | 382 | 318 | 239 | 191 | 159 | 136 | 119 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 | 0.0082 | 0.0096 | 0.0109 |
| | | | | 53 - 73 | $v_f$ (in/min) | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 6.5 | 7.8 | 7.8 | 7.8 | 10.4 |
| M | E 8 - 9 | 1.50 | 0.25 | 115 | n (rev/min) | 1760 | 1174 | 880 | 704 | 587 | 440 | 352 | 293 | 251 | 220 |
| | | | | | $f_z$ (in) | 0.0012 | 0.0018 | 0.0023 | 0.0029 | 0.0035 | 0.0047 | 0.0059 | 0.0070 | 0.0082 | 0.0094 |
| | | | | 105 - 125 | $v_f$ (in/min) | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 10.3 | 12.4 | 12.4 | 12.4 | 16.5 |
| | E 10 - 11 | 1.50 | 0.25 | 86 | n (rev/min) | 1320 | 880 | 660 | 528 | 440 | 330 | 264 | 220 | 189 | 165 |
| | | | | | $f_z$ (in) | 0.0012 | 0.0018 | 0.0023 | 0.0029 | 0.0035 | 0.0047 | 0.0059 | 0.0070 | 0.0082 | 0.0094 |
| | | | | 76 - 96 | $v_f$ (in/min) | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 7.7 | 9.3 | 9.3 | 9.3 | 12.4 |
| K | E 12 - 13 | 1.50 | 0.25 | 114 | n (rev/min) | 1742 | 1161 | 871 | 697 | 581 | 435 | 348 | 290 | 249 | 218 |
| | | | | | $f_z$ (in) | 0.0018 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 | 0.0088 | 0.0105 | 0.0123 | 0.0141 |
| | | | | 94 - 134 | $v_f$ (in/min) | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 15.3 | 18.4 | 18.4 | 18.4 | 24.5 |
| | E 14 - 15 | 1.50 | 0.25 | 78 | n (rev/min) | 1192 | 795 | 596 | 477 | 397 | 298 | 238 | 199 | 170 | 149 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 | 0.0082 | 0.0096 | 0.0109 |
| | | | | 68 - 88 | $v_f$ (in/min) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 8.1 | 9.8 | 9.8 | 9.8 | 13.0 |
| N | E 18 | 1.50 | 0.25 | 420 | n (rev/min) | 6418 | 4278 | 3209 | 2567 | 2139 | 1604 | 1284 | 1070 | 917 | 802 |
| | | | | | $f_z$ (in) | 0.0020 | 0.0029 | 0.0039 | 0.0049 | 0.0059 | 0.0078 | 0.0098 | 0.0117 | 0.0137 | 0.0156 |
| | | | | 370 - 470 | $v_f$ (in/min) | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 62.7 | 75.2 | 75.2 | 75.2 | 100.3 |
| S | E 20 | 1.50 | 0.25 | 12 | n (rev/min) | 183 | 122 | 92 | 73 | 61 | 46 | 37 | 31 | 26 | 23 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0023 | 0.0029 | 0.0035 | 0.0041 | 0.0047 |
| | | | | 10 - 14 | $v_f$ (in/min) | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.6 | 0.6 | 0.6 | 0.9 |
| | E 21 | 1.50 | 0.25 | 14 | n (rev/min) | 220 | 147 | 110 | 88 | 73 | 55 | 44 | 37 | 31 | 28 |
| | | | | | $f_z$ (in) | 0.0010 | 0.0015 | 0.0020 | 0.0024 | 0.0029 | 0.0039 | 0.0049 | 0.0059 | 0.0068 | 0.0078 |
| | | | | 12 - 16 | $v_f$ (in/min) | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.1 | 1.3 | 1.3 | 1.3 | 1.7 |
| | E 22 | 1.50 | 0.25 | 72 | n (rev/min) | 1100 | 733 | 550 | 440 | 367 | 275 | 220 | 183 | 157 | 138 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0027 | 0.0034 | 0.0041 | 0.0055 | 0.0068 | 0.0082 | 0.0096 | 0.0109 |
| | | | | 62 - 82 | $v_f$ (in/min) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 7.5 | 9.0 | 9.0 | 9.0 | 12.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

RFCB444

| | | | | | | SLOTTING | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.00 | 1.00 | 110 | n (rev/min) | 1681 | 1121 | 840 | 672 | 560 | 420 | 336 | 280 | 240 | 210 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 80 - 140 | $v_f$ (in/min) | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 |
| | E 3 - 4 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| | E 5 - 6 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| M | E 8 - 9 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 40 - 60 | $v_f$ (in/min) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| | E 10 - 11 | 1.00 | 1.00 | 40 | n (rev/min) | 611 | 407 | 306 | 244 | 204 | 153 | 122 | 102 | 87 | 76 |
| | | | | | $f_z$ (in) | 0.0008 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 | 0.0038 | 0.0045 | 0.0053 | 0.0060 |
| | | | | 30 - 50 | $v_f$ (in/min) | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| K | E 12 - 13 | 1.00 | 1.00 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0017 | 0.0023 | 0.0028 | 0.0034 | 0.0045 | 0.0056 | 0.0068 | 0.0079 | 0.0090 |
| | | | | 40 - 60 | $v_f$ (in/min) | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| | E 14 - 15 | 1.00 | 1.00 | 40 | n (rev/min) | 611 | 407 | 306 | 244 | 204 | 153 | 122 | 102 | 87 | 76 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 30 - 50 | $v_f$ (in/min) | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| N | E 18 | 1.00 | 1.00 | 240 | n (rev/min) | 3667 | 2445 | 1834 | 1467 | 1222 | 917 | 733 | 611 | 524 | 458 |
| | | | | | $f_z$ (in) | 0.0013 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0050 | 0.0063 | 0.0075 | 0.0088 | 0.0100 |
| | | | | 200 - 280 | $v_f$ (in/min) | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 |
| S | E 20 | 1.00 | 1.00 | 8 | n (rev/min) | 122 | 81 | 61 | 49 | 41 | 31 | 24 | 20 | 17 | 15 |
| | | | | | $f_z$ (in) | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0026 | 0.0030 |
| | | | | 6 - 10 | $v_f$ (in/min) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | E 21 | 1.00 | 1.00 | 8 | n (rev/min) | 122 | 81 | 61 | 49 | 41 | 31 | 24 | 20 | 17 | 15 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0044 | 0.0050 |
| | | | | 6 - 10 | $v_f$ (in/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | E 22 | 1.00 | 1.00 | 40 | n (rev/min) | 611 | 407 | 306 | 244 | 204 | 153 | 122 | 102 | 87 | 76 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0061 | 0.0070 |
| | | | | 20 - 60 | $v_f$ (in/min) | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

RFCB444

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.50 | 0.25 | 160 | n (rev/min) | 2445 | 1630 | 1222 | 978 | 815 | 611 | 489 | 407 | 349 | 306 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 120 - 200 | $v_f$ (in/min) | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 |
| | E 3 - 4 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 |
| | E 5 - 6 | 1.50 | 0.25 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 30 - 70 | $v_f$ (in/min) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| M | E 8 - 9 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 |
| | E 10 - 11 | 1.50 | 0.25 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 | 115 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 | 0.0066 | 0.0075 |
| | | | | 40 - 80 | $v_f$ (in/min) | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| K | E 12 - 13 | 1.50 | 0.25 | 95 | n (rev/min) | 1452 | 968 | 726 | 581 | 484 | 363 | 290 | 242 | 207 | 181 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 75 - 115 | $v_f$ (in/min) | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 |
| | E 14 - 15 | 1.50 | 0.25 | 65 | n (rev/min) | 993 | 662 | 497 | 397 | 331 | 248 | 199 | 166 | 142 | 124 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 45 - 85 | $v_f$ (in/min) | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 | 0.0125 |
| | | | | 300 - 400 | $v_f$ (in/min) | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 |
| S | E 20 | 1.50 | 0.25 | 10 | n (rev/min) | 153 | 102 | 76 | 61 | 51 | 38 | 31 | 25 | 22 | 19 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0044 | 0.0050 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| | E 21 | 1.50 | 0.25 | 12 | n (rev/min) | 183 | 122 | 92 | 73 | 61 | 46 | 37 | 31 | 26 | 23 |
| | | | | | $f_z$ (in) | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0055 | 0.0063 |
| | | | | 10 - 14 | $v_f$ (in/min) | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| | E 22 | 1.50 | 0.25 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 | 115 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 40 - 80 | $v_f$ (in/min) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

Niagara Cutter

RFCB444

| SIDE MILLING - ROUGHING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 6$ | | | | | | | | | | |
| | | | | | | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 |
| P | E 1 - 2 | 1.50 | 0.25 | 160 | n (rev/min) | 2445 | 1630 | 1222 | 978 | 815 | 611 | 489 | 407 | 349 | 306 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 120 - 200 | $v_f$ (in/min) | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 |
| | E 3 - 4 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| | E 5 - 6 | 1.50 | 0.25 | 50 | n (rev/min) | 764 | 509 | 382 | 306 | 255 | 191 | 153 | 127 | 109 | 96 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 30 - 70 | $v_f$ (in/min) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| M | E 8 - 9 | 1.50 | 0.25 | 80 | n (rev/min) | 1222 | 815 | 611 | 489 | 407 | 306 | 244 | 204 | 175 | 153 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 60 - 100 | $v_f$ (in/min) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| | E 10 - 11 | 1.50 | 0.25 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 | 115 |
| | | | | | $f_z$ (in) | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 | 0.0047 | 0.0056 | 0.0066 | 0.0075 |
| | | | | 40 - 80 | $v_f$ (in/min) | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 |
| K | E 12 - 13 | 1.50 | 0.25 | 95 | n (rev/min) | 1452 | 968 | 726 | 581 | 484 | 363 | 290 | 242 | 207 | 181 |
| | | | | | $f_z$ (in) | 0.0014 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 | 0.0070 | 0.0084 | 0.0098 | 0.0113 |
| | | | | 75 - 115 | $v_f$ (in/min) | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 |
| | E 14 - 15 | 1.50 | 0.25 | 65 | n (rev/min) | 993 | 662 | 497 | 397 | 331 | 248 | 199 | 166 | 142 | 124 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 45 - 85 | $v_f$ (in/min) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| N | E 18 | 1.50 | 0.25 | 350 | n (rev/min) | 5348 | 3565 | 2674 | 2139 | 1783 | 1337 | 1070 | 891 | 764 | 669 |
| | | | | | $f_z$ (in) | 0.0016 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0063 | 0.0078 | 0.0094 | 0.0109 | 0.0125 |
| | | | | 300 - 400 | $v_f$ (in/min) | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 | 50.1 |
| S | E 20 | 1.50 | 0.25 | 10 | n (rev/min) | 153 | 102 | 76 | 61 | 51 | 38 | 31 | 25 | 22 | 19 |
| | | | | | $f_z$ (in) | 0.0006 | 0.0009 | 0.0013 | 0.0016 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0044 | 0.0050 |
| | | | | 8 - 12 | $v_f$ (in/min) | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| | E 21 | 1.50 | 0.25 | 12 | n (rev/min) | 183 | 122 | 92 | 73 | 61 | 46 | 37 | 31 | 26 | 23 |
| | | | | | $f_z$ (in) | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0031 | 0.0039 | 0.0047 | 0.0055 | 0.0063 |
| | | | | 10 - 14 | $v_f$ (in/min) | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| | E 22 | 1.50 | 0.25 | 60 | n (rev/min) | 917 | 611 | 458 | 367 | 306 | 229 | 183 | 153 | 131 | 115 |
| | | | | | $f_z$ (in) | 0.0011 | 0.0016 | 0.0022 | 0.0027 | 0.0033 | 0.0044 | 0.0055 | 0.0066 | 0.0077 | 0.0088 |
| | | | | 40 - 80 | $v_f$ (in/min) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

**VFP435 / VFP635 / VFP²435 / VFP²635 / VFP435SB / VFP635SB**

| SLOTTING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO GROUP | SMG | $a_p$ x Dc | $a_e$ x Dc | $v_c$ (sf / min) | | $Z_n = 4$ 3/4 | 1 | 1 1/4 | $Z_n = 6$ 1 1/4 | 1 1/2 | 2 |
| M | E 8 - 9 | 1.00 | 1.00 | 65 | n (rev/min) | 331 | 248 | 199 | 199 | 166 | 124 |
| | | | | | $f_z$ (in) | 0.0024 | 0.0032 | 0.0040 | 0.0040 | 0.0048 | 0.0064 |
| | | | | 50 - 80 | $v_f$ (in/min) | 3.2 | 3.2 | 3.2 | 4.8 | 4.8 | 4.8 |
| | E 10 - 11 | 1.00 | 1.00 | 40 | n (rev/min) | 204 | 153 | 122 | 122 | 102 | 76 |
| | | | | | $f_z$ (in) | 0.0024 | 0.0032 | 0.0040 | 0.0040 | 0.0048 | 0.0064 |
| | | | | 20 - 60 | $v_f$ (in/min) | 2.0 | 2.0 | 2.0 | 2.9 | 2.9 | 2.9 |
| S | E 22 | 1.00 | 1.00 | 60 | n (rev/min) | 306 | 229 | 183 | 183 | 153 | 115 |
| | | | | | $f_z$ (in) | 0.0021 | 0.0028 | 0.0035 | 0.0035 | 0.0042 | 0.0056 |
| | | | | 50 - 70 | $v_f$ (in/min) | 2.6 | 2.6 | 2.6 | 3.9 | 3.9 | 3.9 |

| SIDE MILLING - ROUGHING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | E 8 - 9 | 1.50 | 0.25 | 78 | n (rev/min) | 397 | 298 | 238 | 238 | 199 | 149 |
| | | | | | $f_z$ (in) | 0.0030 | 0.0040 | 0.0050 | 0.0050 | 0.0060 | 0.0080 |
| | | | | 68 - 88 | $v_f$ (in/min) | 4.8 | 4.8 | 4.8 | 7.2 | 7.2 | 7.2 |
| | E 10 - 11 | 1.50 | 0.25 | 48 | n (rev/min) | 244 | 183 | 147 | 147 | 122 | 92 |
| | | | | | $f_z$ (in) | 0.0030 | 0.0040 | 0.0050 | 0.0050 | 0.0060 | 0.0080 |
| | | | | 38 - 58 | $v_f$ (in/min) | 2.9 | 2.9 | 2.9 | 4.4 | 4.4 | 4.4 |
| S | E 22 | 1.50 | 0.25 | 72 | n (rev/min) | 367 | 275 | 220 | 220 | 183 | 138 |
| | | | | | $f_z$ (in) | 0.0026 | 0.0035 | 0.0044 | 0.0044 | 0.0053 | 0.0070 |
| | | | | 62 - 82 | $v_f$ (in/min) | 3.9 | 3.9 | 3.9 | 5.8 | 5.8 | 5.8 |

A = Air D = Dry E = Emulsion (flood coolant) M = Mist

Please reference the Workpiece Material Classification chart located on page 12

# CUTTING DIAMETER TOLERANCES SOLID CARBIDE END MILLS

| END MILL STYLE | NUMBER OF FLUTES | NIAGARA TOLERANCE | CORRESPONDING LIST NUMBERS |
|---|---|---|---|
| SINGLE-END DOUBLE-END FINISHERS | ALL | + .000 / - .002 | STS430, STR430, STB430, STRN430, STBN430, STS430M, STR430M, STB430M, STR440, STB440, STRN440, STBN440, STR440M, STB440M, STS540, STR540, STS540M,STR540M, A245, A245R, AB245, AN245, AN245R, ANB245, A340, AN340, A345, A345R, AN345, AN345R, A345M, S335, SB335, SN335, S545, S545R, S335M, S545M, S645M, C230, C230R, C330, C360, C430, C430R, CB230, CB330, CB430, C230M, C430M, CB230M, CB430M, C330M, CN430M, CD230, CD430, CSD230, CSD430, CSDB230, CSDB430 |
| SINGLE-END DOUBLE-END FINISHERS (FLUTE DIA <=7/64") | ALL | + / - .0005" | C230, CB230, CSD230, CSDB230, C330, CB330, C430, CB430, CSD430, CSDB430, C230M, CB230M, C330M, C430M, CB430M |
| SINGLE-END FINISHERS NC TOLERANCE | 2 & 4 | + .001 / - .000 | CNC230, CNCB230, CNC430, CNCB430 |
| SINGLE-END ROUGHERS | 3, 4 & 5 | + .000 / - .003 | AR330, SR420, SR545, SR420M |
| SINGLE-END MICRO DECIMAL | 2 & 4 | + / - .0005 | ME230, MES230, MEB230, MESB230, ME430, MES430, MEB430, MESB430 |
| THREAD MILLS | ALL | + .000 / - .002 | NTM100UN, NTM120UN, NTM160UN, NTM200NPT, NTM300NPTF, NTM400MI |
| COMPOSITE CUTTING TOOLS | ALL | + .000 / - .002 | DIACC, DIAEPB, DIAPPB, DIABEB, DIAMFR |
| DIAMOND COATED END MILLS | 2 & 4 | + / - .001 | DIA230, DIA430, DIAB230, DIACR430, DIAL230, DIAL430, DIALB230, DIALB430, DIAXR430, DIAXRB430, DIAXRR430, DIAXS430, DIAXSB430, DIAXSR430, DIA230M, DIAB230M, DIA430M, DIAB430M, DIACR430M |
| MOLD AND DIE | 6 | + .000 / - .002 | M645, M645R, MZ645, MZ645R, MZ645M, MZR645M |
| MOLD AND DIE (FLUE DIA < SHANK DIA) | 2 | + / - .0005 | MB215, MB215M, MBZ215, MBZ215M |
| MOLD AND DIE (FLUE DIA = SHANK DIA) | 2 | + .000 / - .001 | MB215, MB215M, MBZ215, MBZ215M |
| BALL-END | ALL | BALL RADIUS TOLERANCE: FLUTE DIA TOLERANCE / 2 | ALL |
| CORNER RADIUS | ALL | + / - .001" | ALL SERIES |

| SHANK DIAMETER TOLERANCES | END MILL STYLE | NIAGARA TOLERANCE |
|---|---|---|
| | ALL INCH SHANK | - .0001 / - .0004 |
| | ALL METRIC SHANK | h6 |

| LENGTH OF CUT TOLERANCES | END MILL STYLE | NIAGARA TOLERANCE |
|---|---|---|
| | ALL EXCLUDING MICRO DECIMAL | + .030 / -0 |
| | MICRO DECIMAL | + .010 / -0 |

| OVERALL LENGTH TOLERANCES | END MILL STYLE | NIAGARA TOLERANCE |
|---|---|---|
| | ALL | + / - .060 |

NOTE: ALL DIMENSIONS IN INCH UNLESS OTHERWISE NOTED

# CUTTING DIAMETER TOLERANCES HIGH SPEED STEEL END MILLS

| END MILL STYLE | NUMBER OF FLUTES | TYPE OR RANGE | ANSI* TOLERANCE | NIAGARA TOLERANCE | CORRESPONDING LIST NUMBERS |
|---|---|---|---|---|---|
| DOUBLE-END FINISHERS | 2, 3 & 4 | CENTER CUTTING | + .0000 / - .0015 | + .0000 / -.0015 | D201, D400, DA206, DB215, DB260, DBS217, DC402, DL213, DL418, DR209, DR416, DS211, DS420, DTF310 |
| | 4 FLUTE NON-CENTER CUTTING | FLUTE SMALLER THAN SHANK | + .003 / - .000 | + .001 / - .000 | D400 |
| | | SHANK & FLUTE SAME SIZE | + .0000 / - .0025 | + .0000 / - .0015 | |
| SINGLE-END FINISHERS | 2 | STUB LENGTH | + .0000 / - .0015 | + .0000 / - .0015 | A208 , A337, AB337, AB910, ACB337, AL337, S203, S404, SB207, SB470, SC406, SEB270, SEL250, SK204, SLRB601, SLRC602, SR208, SR414, STF320, SLR600 |
| | 2, 3, 4, 6 & 8 | ALL EXCLUDING HEAVY DUTY | + .003 / - .000 | + .001 / - .000 | |
| METRIC FINISHERS WITH INCH SHANK | 2 & 4 | ALL SIZES | NO SPECIFICATION | + .001 / - .000 | SMM830, SMM850 |
| BALL-END | ALL | ALL SIZES | NO SPECIFICATION | BALL RADIUS TOLERANCE: FLUTE DIA TOLERANCE / 2 | |

| SHANK DIAMETER TOLERANCES | END MILL STYLE | ANSI* TOLERANCE | NIAGARA TOLERANCE |
|---|---|---|---|
| | ALL INCH SHANK | - .0001 / - .0005 | - .0001 / - .0005 |

| LENGTH OF CUT TOLERANCES | END MILL STYLE | ANSI* TOLERANCE | NIAGARA TOLERANCE |
|---|---|---|---|
| | ALL EXCLUDING HEAVY DUTY | + .031 / - .031 | + .031 / - .000 |
| | HEAVY DUTY | + .062 / - .062 | + .062 / - .000 |

| OVERALL LENGTH TOLERANCES | END MILL STYLE | ANSI* TOLERANCE | NIAGARA TOLERANCE |
|---|---|---|---|
| | ALL EXCEPT HEAVY DUTY 3” DIA FLUTE | + .062 / - .062 | + .062 / - .000 |
| | 3” DIA HEAVY DUTY | + .125 / - .125 | + .125 / - .000 |

*TAKEN FROM TABLE 77 OF THE USA STANDARDS FOR MILLING CUTTERS AND END MILLS, ANSI B94.19-1985 PUBLISHED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS.

NOTE: ALL DIMENSIONS IN INCH UNLESS OTHERWISE NOTED.

# CUTTING DIAMETER TOLERANCES COBALT END MILLS

| END MILL STYLE | NUMBER OF FLUTES | TYPE OR RANGE | ANSI* TOLERANCE | NIAGARA TOLERANCE | CORRESPONDING LIST NUMBERS |
|---|---|---|---|---|---|
| DOUBLE-END FINISHERS | 2 & 4 | CENTER CUTTING | + .0000 / - .0015 | + .0000 / -.0015 | DP530, DPC560 |
| SINGLE-END FINISHERS | 2, 4, 6 & 8 | ALL EXLUDING HEAVY DUTY | + .003 / - .000 | + .001 / - .000 | EX350, SP205 , SP408, SPC408, SPB540 |
| HEAVY DUTY FINISHERS | 4, 6 & 8 | HEAVY DUTY WITH 2" & 2-1/2" DIA SHANKS | + .005 / - .000 | + .005 / - .000 | HDP890 (ALL SINGLE END FINISHERS WITH 2" & 2-1/2" DIA SHANKS) |
| MULTI FLUTE COARSE & FINE PITCH ROUGHERS | 4, 5, 6, 8 & 10 | 1" FLUTE & UNDER | + .025 / - .005 | + .003 / - .000 | EXR350 , RMB700 , RMB449 , REM710 , REC700 , RXC753, REM445 , REC448 |
| | | 1-1/8" FLUTE & OVER | | + .006 / - .000 | |
| ALL 3 FLUTE COARSE & FINE PITCH ROUGHERS | 3 | ALL SIZES | + .025 / - .005 | + .005 / - .000 | RTM713, RHC752, RHLC754, RTM447 |
| TRUNCATED ROUGHER/FINISHERS AND CHIPBREAKERS | 3, 4, 5 6 & 8 | ALL SIZES | NO SPECIFICATIONS | + .001 / - .000 | RFM440 , RFM441 , RFCB444 |
| METRIC FINISHERS WITH INCH SHANK | 2 & 4 | ALL SIZES | NO SPECIFICATIONS | + .001 / - .000 | SMM835, SMM845 |
| VFP | 4 & 6 | ALL SIZES | NO SPECIFICATIONS | + .002 / - .000 | VFP435, VFP635, VFP2435, VFP2635 |
| BALL-END | ALL | ALL SIZES | NO SPECIFICATIONS | BALL RADIUS TOLERANCES: FLUTE DIA TOLERANCES / 2 | |

| | END MILL STYLE | OTHER SPECIFICATION | ANSI* TOLERANCE | NIAGARA TOLERANCE |
|---|---|---|---|---|
| SHANK DIAMETER TOLERANCES | ALL INCH SHANK | | - .0001 / - .0005 | - .0001 / - .0005 |
| | ALL METRIC SHANK | SPECIFICATION PER DIN 1835 FORM B | NO SPECIFICATION | DIN (h6)mm |

| | END MILL STYLE | OTHER SPECIFICATION | ANSI* TOLERANCE | NIAGARA TOLERANCE |
|---|---|---|---|---|
| LENGTH OF CUT TOLERANCES | ALL EXCLUDING HEAVY DUTY | | + .031 / - .031 | + .031 / - .000 |
| | HEAVY DUTY | | + .062 / - .062 | + .062 / - .000 |
| | ALL METRIC SHANK | SPECIFICATION PER DIN ANS | NO SPECIFICATION | + 0.7mm / - 0 |

| | END MILL STYLE | OTHER SPECIFICATION | ANSI* TOLERANCE | NIAGARA TOLERANCE |
|---|---|---|---|---|
| OVERALL LENGTH TOLERANCES | ALL EXCEPT HEAVY DUTY 3" DIA FLUTE | | + .062 / - .062 | + .062 / - .000 |
| | 3" DIA HEAVY DUTY | | + .125 / - .125 | + .125 / - .000 |
| | ALL METRIC SHANK | SPECIFICATION PER DIN ANS | NO SPECIFICATION | + 0.7mm / - 0 |

*TAKEN FROM TABLE 77 OF THE USA STANDARDS FOR MILLING CUTTERS AND END MILLS, ANSI B94.19-1985 PUBLISHED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS.

NOTE: ALL DIMENSIONS IN INCH UNLESS OTHERWISE NOTED.

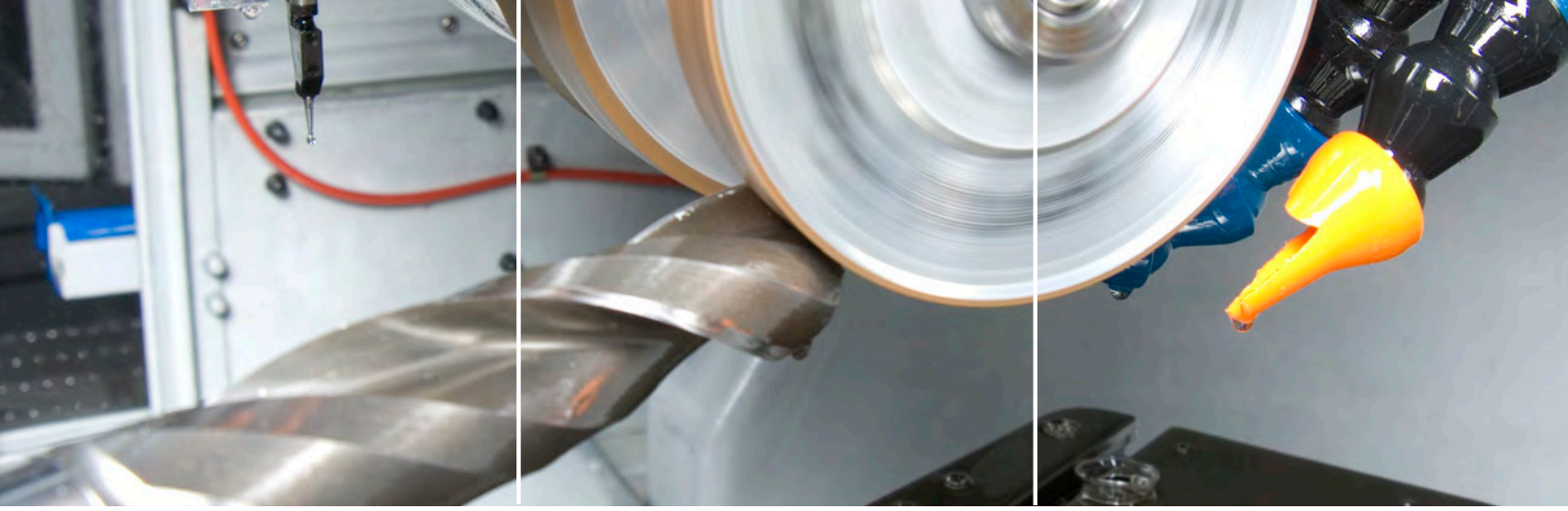
## CEMENTED CARBIDE END MILLS

Cemented carbide end mills from Niagara Cutter are not included in the product range intended for the following requirements. Nevertheless Niagara Cutter can make the following declaration.

These products meet all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.
Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Regrinding:
Wet or dry grinding can produce potentially hazardous dusts or mists that can irritate skin, eyes, nose, throat and result in lung damage or disease. To avoid injury use proper safety precautions and protective equipment.

Disposal:
Niagara Cutter will buy back solid carbide tools for recycling. Solid carbide tools should be separated from other metal waste (steel, aluminium, copper etc).
All packing material is fully recyclable.



## CUSTOMIZED TOOLING

A significant portion of Niagara´s offering is in the form of customized tools. Niagara engineers work in close cooperation with customers to provide the best possible solution to specific machining challenges where the demands stretch beyond standard tools. We also offer a quick delivery solution for standard tools requiring simple modifications to meet specific dimensional requirements. Fast turnaround from quotation to product delivery is a hallmark of our modified tool program.

## RECONDITIONING CUTS COST AND TOOL INVENTORY

Niagara's modern carbide tools offer remarkable performance by utilizing the best combinations of carbide substrates with high wear resistant coatings, optimized cutting geometry and controlled edge preparation.

However good a tool is, as part of their function, they will eventually show signs of wear on the cutting edge. Controlling this wear and the timely replacement of the tool will allow the used tool to be reconditioned, thus reducing tool investment costs.

Your solid carbide tools are reconditioned using the same advanced technology and care that we use to manufacture our new products. These tools are remanufactured to our normal high standards with the original Niagara geometry, edge preparation and coating processes.

For futher information on custom, modified and reconditioned tools please contact your local Authorized Distributor.

## RECYCLING

Tungsten carbide is a valuable and limited resource. Estimations of the existing reserves of tungsten suggest that with present consumption resources will be depleted within 40 - 100 years. For the last few years demand has been higher than production and a general trend towards higher consumption can clearly be seen.

Recycling of used material compared to the mining of virgin material reduces the environmental impact. By recycling we can prolong the time before the resources are at an end and reduce energy consumption by approximately 35%. At the same time the $CO_2$ emissions are reduced by approximately 40%.

Contact your local Authorized Distributor to set-up your recycling program.

For customer service, call:
**1-248-528-5220**

For technical assistance, call:
**1-800-832-8326**

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