



**ACCUPRO**<sup>®</sup>  
High Performance Milling

**HIGH-PERFORMANCE MILLING SOLUTIONS**  
**NEW HS SERIES END MILLS**

[mscdirect.com/accuprohs](https://mscdirect.com/accuprohs)

**MSC**<sup>®</sup>

# PUSH YOUR PRODUCTIVITY FURTHER

Accupro® represents the ultimate combination of performance and efficiency. These end mills are designed to help you make the most of your productivity, improve workpiece quality and cut downtime. The result? Solid performance and confidence on every job, giving you every advantage when it comes to profitability.

## RELIABILITY:

Crafted to meet the highest performance standards, Accupro cutting tools stand up to everyday use.

## EFFICIENCY:

Accupro® HS Series end mills are built to give you a competitive edge with smarter tools that make sense for your business.

## HS SERIES END MILLS

For cutting steel, stainless steel, cast iron, titanium, high temperature alloys and hardened materials (<50RC)



**4-Flute:** for slotting, roughing, pocketing and heavy peripheral cutting



**5-Flute:** finishing tool for reduced chip load and improved surface finish



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### AVAILABILITY:

With 600 tools to choose from, Accupro HS Series end mills are there for you every day with unmatched product availability, delivered on time and backed by MSC experts.



**7-Flute:** an equal index finisher for profile and peripheral cutting

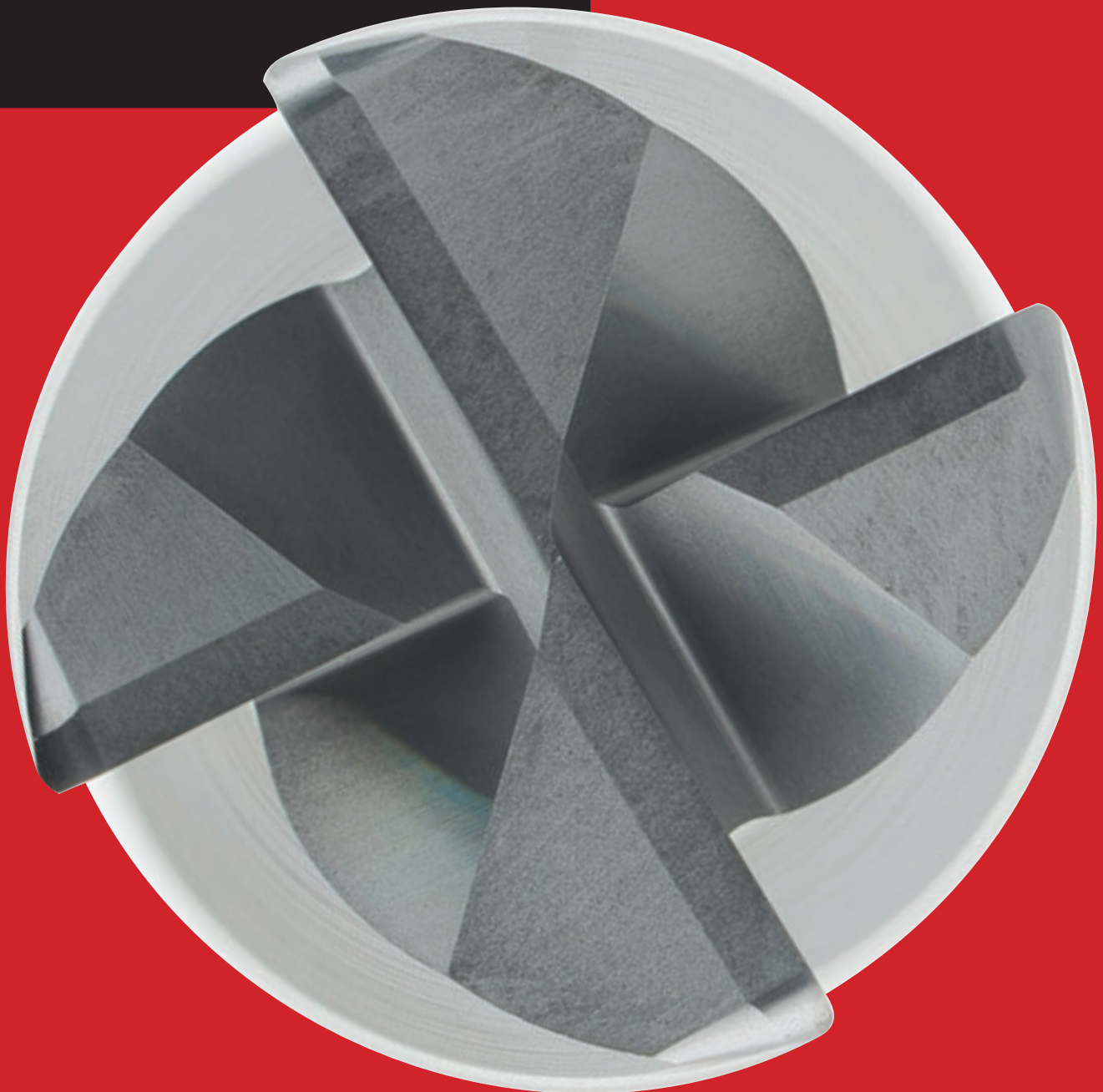
## TAKE IT FOR A TEST SPIN

Talk with your MSC<sup>®</sup> rep about a free demonstration and put Accupro<sup>®</sup> to the test. Or visit [mscdirect.com/accuprohs](https://mscdirect.com/accuprohs)

# ACCUPRO<sup>®</sup> 4 FLUTE SOLID CARBIDE END MILLS

- Uses: Slotting, Roughing, Pocketing and Heavy Peripheral Cutting
- 38° Helix Variable Index Center Cutting
- Capable of Helical Interpolation and Ramping up to 5°
- Solid Micrograin Carbide

AlTiCrN is a multi-layered nanocomposite made up of aluminum chromium titanium nitride. It offers increased performance at high-speeds, improved edge toughness and long tool life. The titanium reduces the adhesive wear compared to conventional AlCrN coatings. It is commonly used for stainless steel, titanium, high temperature alloys and hardened tool steels 35HRC or greater.





## 4 Flute Variable Index Square End Mills

### Features:



- 4 Flute end mills used for slotting, roughing, pocketing and heavy peripheral cutting
- Eccentric ground OD with edge protection
- 38° helix with variable index for maximum metal removal and chip management
- Tool geometry improves tool engagement angle, increases chip load and easy evacuation
- New nano coating for higher hardness levels and increased lubricity
- Capable of helical interpolation and ramping up to 5°
- Suitable for high speed machining and trochoidal tool paths
- Can be used in aerospace, automotive, energy, medical and mold & die

Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Overall Length (In.)	Order #
1/8	1/8	1/4	2	42526772
1/8	1/8	1/2	2	42527028
3/16	3/16	5/16	2	42527002
3/16	3/16	5/8	2-1/2	42526996
1/4	1/4	3/8	2	42526988
1/4	1/4	1/2	2-1/2	42526970
1/4	1/4	3/4	2-1/2	42526962
1/4	1/4	1	3	42526954
5/16	5/16	7/16	2	42526939
5/16	5/16	13/16	2-1/2	42526921
5/16	5/16	1	3	42526913
3/8	3/8	1/2	2	42526905
3/8	3/8	7/8	2-1/2	42526897
3/8	3/8	1	2-1/2	42526889
3/8	3/8	1-1/4	3	42526814
7/16	7/16	5/8	2-1/2	42526806
7/16	7/16	7/8	2-3/4	42526798
7/16	7/16	1-1/8	3	42528059
1/2	1/2	5/8	2-1/2	42528042

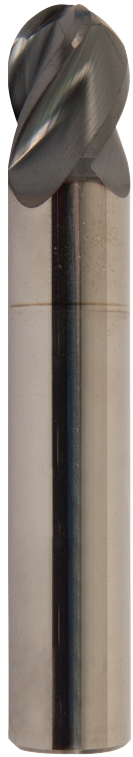
Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Overall Length (In.)	Order #
1/2	1/2	1	3	42528034
1/2	1/2	1-1/4	3	42528067
1/2	1/2	1-5/8	4	42528026
5/8	5/8	7/8	3	42528075
5/8	5/8	1-1/4	3-1/2	42528018
5/8	5/8	1-5/8	3-1/2	42528000
5/8	5/8	2-1/4	5	42527994
5/8	5/8	3-1/4	6	42527986
3/4	3/4	7/8	3	42528083
3/4	3/4	1-1/4	4	42528091
3/4	3/4	1-1/4	4	42527978
3/4	3/4	1-5/8	4	42528109
3/4	3/4	2-1/4	5	42527960
3/4	3/4	3-1/4	6	42527952
1	1	1-1/2	4	42526871
1	1	2	4	42526863
1	1	2-5/8	5	42526848
1	1	3	6	42526830
1	1	4-1/4	7	42526822



### 4 Flute Variable Index Ball End Mills

#### Features:

- 4 Flute end mills used for slotting, roughing, pocketing and heavy peripheral cutting
- Eccentric ground OD with edge protection
- 38° helix with variable index for maximum metal removal and chip management
- Tool geometry improves tool engagement angle, increases chip load and easy evacuation
- New nano coating for higher hardness levels and increased lubricity
- Suitable for high speed machining
- Can be used in aerospace, automotive, energy, medical and mold & die
- Ball end mills used for shallow slotting, contour milling and pocketing applications. Used to produce a radius in the bottom of slots or pockets for added strength. Also used to create compound curves for molds and dies where sharp corners must be avoided



Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Overall Length (In.)	Order #
1/8	1/8	1/4	2	42495457
1/8	1/8	1/2	2	42495440
3/16	3/16	5/16	2	42495432
3/16	3/16	9/16	2-1/2	42495424
1/4	1/4	3/8	2	42495408
1/4	1/4	1/2	2-1/2	42495390
1/4	1/4	3/4	2-1/2	42495382
5/16	5/16	7/16	2	42495366
5/16	5/16	13/16	2-1/2	42495416
3/8	3/8	1/2	2	42495572
3/8	3/8	1	2-1/2	42495564
1/2	1/2	5/8	2-1/2	42495549
1/2	1/2	1	3	42495556
1/2	1/2	1-1/4	3	42495531
5/8	5/8	7/8	3	42495523
5/8	5/8	1-1/4	3-1/2	42495515
5/8	5/8	1-5/8	3-1/2	42495499
3/4	3/4	1	3	42495507
3/4	3/4	1-5/8	4	42495481
1	1	1-1/4	4	42495465
1	1	2	4	42495473



## 4 Flute Variable Index Corner Radius End Mills

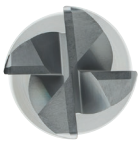
### Features:

- 4 Flute end mills used for slotting, roughing, pocketing and heavy peripheral cutting
- Eccentric ground OD with edge protection
- 38° helix with variable index for maximum metal removal and chip management
- Tool geometry improves tool engagement angle, increases chip load and easy evacuation
- New nano coating for higher hardness levels and increased lubricity
- Capable of helical interpolation and ramping up to 5°
- Suitable for high speed machining and trochoidal tool paths
- Can be used in aerospace, automotive, energy, medical and mold & die
- Corner Radius strengthens the corner of the cutting end and allows for longer tool life



Mill Dia. (In.)	Shank Dia. (In.)	Length of Cut (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1/8	1/8	1/4	0.010	2	42503771
1/8	1/8	1/2	0.010	2	42503805
3/16	3/16	5/16	0.010	2	42503755
3/16	3/16	5/8	0.010	2-1/2	42503748
1/4	1/4	3/8	0.020	2	42503797
1/4	1/4	1/2	0.020	2-1/2	42504886
1/4	1/4	3/4	0.020	2-1/2	42504878
1/4	1/4	1	0.020	3	42504860
5/16	5/16	5/16	0.020	2	42504852
5/16	5/16	13/16	0.020	2-1/2	42504845
5/16	5/16	1	0.020	3	42504837
3/8	3/8	1/2	0.020	2	42504829
3/8	3/8	7/8	0.020	2-1/2	42504761
3/8	3/8	1	0.020	2-1/2	42504753
3/8	3/8	1-1/4	0.020	3	42504746
7/16	7/16	5/8	0.020	2-1/2	42504738
7/16	7/16	7/8	0.020	2-3/4	42504720
7/16	7/16	1-1/8	0.020	3	42504712

Mill Dia. (In.)	Shank Dia. (In.)	Length of Cut (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1/2	1/2	5/8	0.030	2-1/2	42504704
1/2	1/2	1	0.030	3	42504654
1/2	1/2	1-1/4	0.030	3	42504647
1/2	1/2	1-5/8	0.030	4	42504613
5/8	5/8	7/8	0.030	3	42504555
5/8	5/8	1-1/4	0.030	3-1/2	42504548
5/8	5/8	1-5/8	0.030	3-1/2	42504530
5/8	5/8	2-1/4	0.030	5	42504522
5/8	5/8	3-1/4	0.030	6	42504514
3/4	3/4	7/8	0.030	3	42504506
3/4	3/4	1-5/8	0.030	4	42504449
3/4	3/4	2-1/4	0.030	5	42504431
3/4	3/4	3-1/4	0.030	6	42504415
1	1	1-1/2	0.030	4	42503888
1	1	2	0.030	4	42503938
1	1	2-5/8	0.030	5	42503870
1	1	3	0.030	6	42503862
1	1	4-1/4	0.030	7	42503854



### 4 Flute Variable Index Extended Reach Corner Radius End Mills

#### Features:

- 4 Flute end mills used for slotting, roughing, pocketing and heavy peripheral cutting
- Eccentric ground OD with edge protection
- 38° helix with variable index for maximum metal removal and chip management
- Tool geometry improves tool engagement angle, increases chip load and easy evacuation
- New nano coating for higher hardness levels and increased lubricity
- Capable of helical interpolation and ramping up to 5°
- Suitable for high speed machining and trochoidal tool paths
- Can be used in aerospace, automotive, energy, medical and mold & die
- Corner Radius strengthens the corner of the cutting end and allows for longer tool life
- Extended Reach tools provide strength and rigidity for deep pocketing applications



Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Neck Length (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1/8	1/8	5/32	3/8	0.010	3	42503847
1/8	1/8	5/32	1/2	0.010	3	42503839
1/8	1/8	5/32	5/8	0.010	3	42503821
3/16	3/16	7/32	1/2	0.010	3	42503813
3/16	3/16	7/32	3/4	0.010	3	42503763
3/16	3/16	7/32	1	0.010	3	42503789
1/4	1/4	3/8	3/4	0.020	3	42504910
1/4	1/4	3/8	1-1/8	0.020	4	42504902
1/4	1/4	3/8	2-1/8	0.020	4	42504894
3/8	3/8	1/2	1-1/8	0.020	4	42504803
3/8	3/8	1/2	2-1/8	0.020	4	42504795
3/8	3/8	1/2	3-1/8	0.020	6	42504787
3/8	3/8	1/2	4-1/8	0.020	6	42504779
1/2	1/2	5/8	1-1/2	0.030	4	42504696
1/2	1/2	5/8	2-1/4	0.030	4	42504688
1/2	1/2	5/8	3-3/8	0.030	6	42504670
1/2	1/2	5/8	4-1/8	0.030	6	42504662
5/8	5/8	3/4	1-5/8	0.030	4	42504605
5/8	5/8	3/4	2-3/8	0.030	6	42504589
5/8	5/8	3/4	3-3/8	0.030	6	42504571
5/8	5/8	3/4	4-1/8	0.030	6	42504563
3/4	3/4	1	2	0.030	4	42504498
3/4	3/4	1	2-1/2	0.030	6	42504480
3/4	3/4	1	3-3/8	0.030	6	42504472
3/4	3/4	1	4-1/8	0.030	6	42504464
1	1	1-1/4	2-1/4	0.030	4	42503920
1	1	1-1/4	2-5/8	0.030	6	42503912
1	1	1-1/4	3-3/8	0.030	6	42503904
1	1	1-1/4	4-1/8	0.030	6	42503896





## 4 Flute Variable Index Corner Radius Chipbreaker End Mills

### Features:

- 4 Flute end mills used for slotting, roughing, pocketing and heavy peripheral cutting
- Eccentric ground OD with edge protection
- 38° helix with variable index for maximum metal removal and chip management
- Tool geometry improves tool engagement angle, increases chip load and easy evacuation
- New nano coating for higher hardness levels and increased lubricity
- Capable of helical interpolation and ramping up to 5°
- Suitable for high speed machining and trochoidal tool paths
- Can be used in aerospace, automotive, energy, medical and mold & die
- Corner Radius strengthens the corner of the cutting end and allows for longer tool life
- Chipbreaker reduces cutting forces and allows for high feed rates in roughing applications



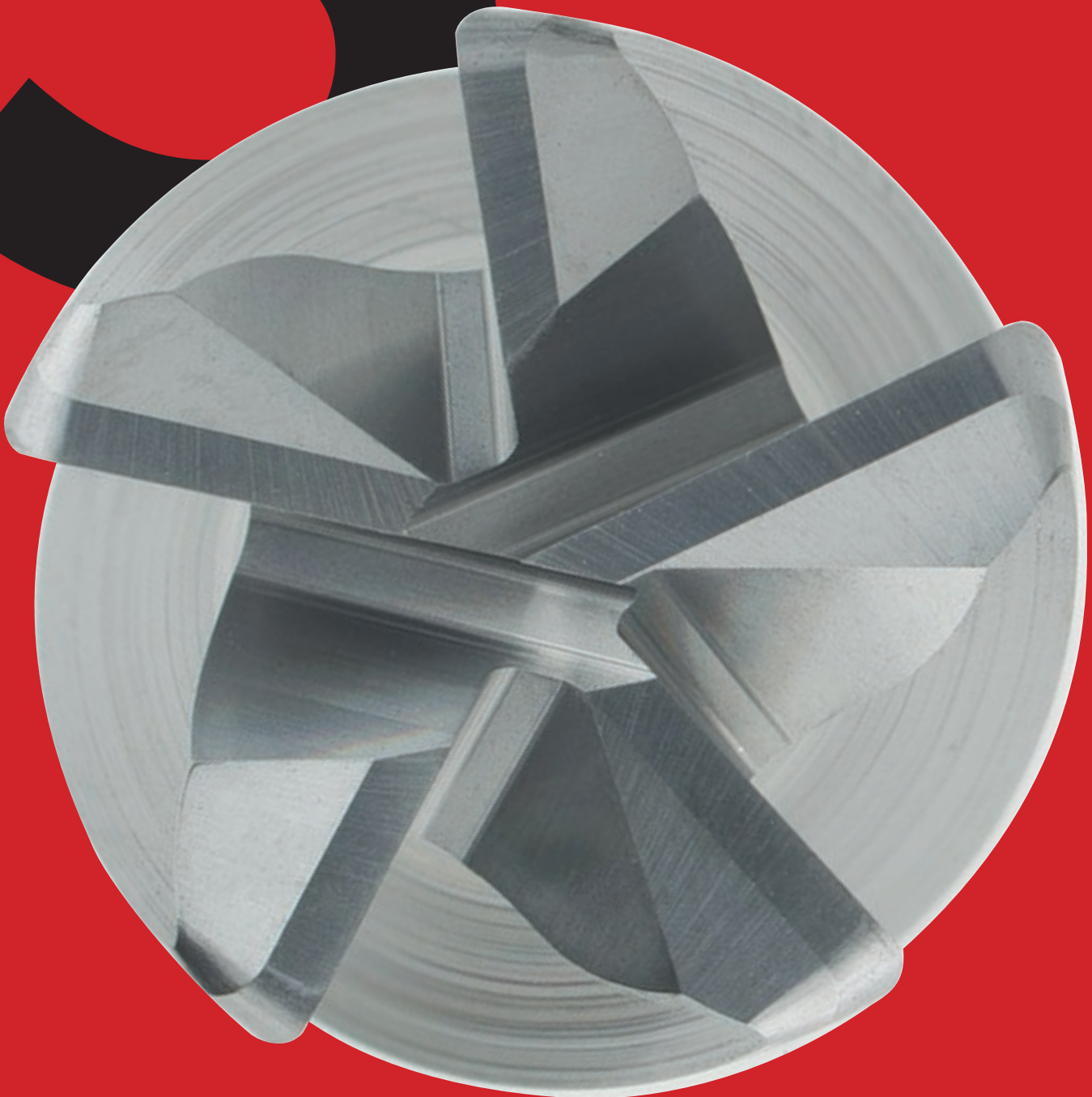
Mill Dia. (In.)	Shank Dia. (In.)	Length of Cut (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1/8	1/8	1/4	0.010	2	42521252
1/8	1/8	1/2	0.010	2	42521278
3/16	3/16	5/16	0.010	2	42521799
3/16	3/16	5/8	0.010	2-1/2	42521781
1/4	1/4	3/8	0.020	2	42521773
1/4	1/4	1/2	0.020	2-1/2	42521765
1/4	1/4	3/4	0.020	2-1/2	42521757
1/4	1/4	1	0.020	3	42521740
5/16	5/16	7/16	0.020	2	42521732
5/16	5/16	13/16	0.020	2-1/2	42521724
5/16	5/16	1	0.020	3	42521708
3/8	3/8	1/2	0.020	2	42521690
3/8	3/8	7/8	0.020	2-1/2	42521682
3/8	3/8	1	0.020	2-1/2	42521674
3/8	3/8	1-1/4	0.020	3	42521666
7/16	7/16	5/8	0.020	2-1/2	42521658
7/16	7/16	7/8	0.020	2-3/4	42521641
7/16	7/16	1-1/8	0.020	3	42521625
1/2	1/2	5/8	0.030	2-1/2	42521617

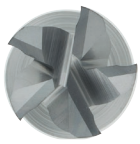
Mill Dia. (In.)	Shank Dia. (In.)	Length of Cut (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1/2	1/2	1	0.030	3	42521609
1/2	1/2	1-1/4	0.030	3	42521591
1/2	1/2	1-5/8	0.030	4	42521583
5/8	5/8	7/8	0.030	3	42521575
5/8	5/8	1-1/4	0.030	3-1/2	42521567
5/8	5/8	1-5/8	0.030	3-1/2	42521559
5/8	5/8	2-1/4	0.030	5	42521542
5/8	5/8	3-1/4	0.030	6	42521534
3/4	3/4	7/8	0.030	3	42521526
3/4	3/4	1-1/4	0.030	4	42521518
3/4	3/4	1-5/8	0.030	4	42521500
3/4	3/4	2-1/4	0.030	5	42521492
3/4	3/4	3-1/4	0.030	6	42521484
1	1	1-1/2	0.030	4	42521310
1	1	2	0.030	4	42521302
1	1	2-5/8	0.030	5	42521294
1	1	3	0.030	6	42521286
1	1	4-1/4	0.030	7	42521260

# ACCUPRO<sup>®</sup> 5 FLUTE SOLID CARBIDE END MILLS

- Uses: Roughing and Finishing
- 38° Helix Variable Index Center Cutting
- Balanced Variable Index for Reduced Harmonics
- One Tooth to Center for Improved Floor Finish
- Solid Micrograin Carbide

AlTiCrN is a multi-layered nanocomposite made up of aluminum chromium titanium nitride. It offers increased performance at high-speeds, improved edge toughness and long tool life. The titanium reduces the adhesive wear compared to conventional AlCrN coatings. It is commonly used for stainless steel, titanium, high temperature alloys and hardened tool steels 35HRC or greater.





## 5 Flute Variable Index Square End Mills

### Features:

- 5 Flute end mills used for roughing finishing
- Eccentric ground OD with edge protection
- 38° helix with variable index for maximum metal removal and chip management
- Tool geometry improves tool engagement angle, increases chip load and easy evacuation
- New nano coating for higher hardness levels and increased lubricity
- Suitable for high speed machining and trochoidal tool paths
- Can be used in aerospace, automotive, energy, medical and mold & die
- Balanced Variable Index for reduced harmonics
- One tooth to center for improved floor finish

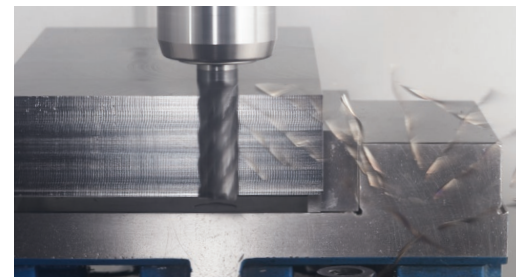


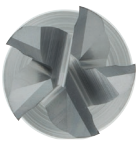
Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Overall Length (In.)	Order #
1/8	1/8	1/4	1-1/2	42528208
1/8	1/8	1/2	2	42527135
1/8	1/8	3/4	2-1/2	42527119
3/16	3/16	5/16	2	42528232
3/16	3/16	9/16	2	42528224
3/16	3/16	3/4	2-1/2	42527069
1/4	1/4	3/8	2	42528240
1/4	1/4	1/2	2-1/2	42528265
1/4	1/4	3/4	2-1/2	42528273
1/4	1/4	1	3	42527036
1/4	1/4	1-1/4	3	42528307
5/16	5/16	7/16	2	42527929
5/16	5/16	13/16	2-1/2	42528299
5/16	5/16	1	3	42528281
3/8	3/8	1/2	2	42527937
3/8	3/8	1	2-1/2	42527879
3/8	3/8	1-1/4	3	42527861
3/8	3/8	1-1/2	3	42527853
1/2	1/2	5/8	2-1/2	42527846
1/2	1/2	1	3	42527788
1/2	1/2	1-1/4	3	42527770
1/2	1/2	1-5/8	4	42527762

Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Overall Length (In.)	Order #
1/2	1/2	2	4	42527747
5/8	5/8	3/4	3	42527739
5/8	5/8	1-1/4	3-1/2	42527689
5/8	5/8	1-5/8	3-1/2	42527598
5/8	5/8	2-1/8	4	42527580
5/8	5/8	2-1/2	5	42527572
3/4	3/4	1	3	42527564
3/4	3/4	1-5/8	4	42527515
3/4	3/4	2-1/4	5	42527499
3/4	3/4	2-3/4	5	42527481
3/4	3/4	3-1/4	6	42527473
1	1	1-1/4	4	42527234
1	1	2	4	42527184
1	1	2-5/8	5	42527168
1	1	3-1/4	6	42528182
1	1	4-1/4	7	42527150
1-1/4	1-1/4	1-1/2	4-1/2	42528117
1-1/4	1-1/4	2	4-1/2	42527267
1-1/4	1-1/4	2-5/8	6	42528141
1-1/4	1-1/4	3-1/4	6	42527259
1-1/4	1-1/4	4-1/2	7	42527242

Machine	Mazak i600 VRX	
Side Milling	<b>4140 Material</b>	<b>1018 Material</b>
Depth of Cut	.100 Radial, 2" deep	.100 Radial, 2" deep
Surface footage	359 Surface footage	400 Surface footage
Feed Per tooth	.007" Per Tooth	.007" Per Tooth
Inch Per Min	12.8 IPM	14.3 IPM
Spindle Speed	1833 RPM	2037 RPM

End mill used: 3/4 x 3/4 x 2 1/4 x 5 Order #42527499





## 5 Flute Variable Index Extended Reach Square End Mills

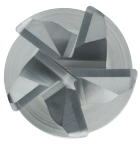
**Features:**

- 5 Flute end mills used for roughing and finishing
- Eccentric ground OD with edge protection
- 38° helix with variable index for maximum metal removal and chip management
- Tool geometry improves tool engagement angle, increases chip load and easy evacuation
- New nano coating for higher hardness levels and increased lubricity
- Suitable for high speed machining and trochoidal tool paths
- Can be used in aerospace, automotive, energy, medical and mold & die
- Balanced Variable Index for reduced harmonics
- One tooth to center for improved floor finish
- Extended Reach tools provide strength and rigidity for deep pocketing applications



Mill Dia. (In.)	Shank Dia. (In.)	Length of Cut (In.)	Neck Length (In.)	Overall Length (In.)	Order #
1/8	1/8	3/16	3/8	2	42527143
1/8	1/8	3/16	1/5	2	42528190
1/8	1/8	3/16	3/4	2-1/2	42527127
3/16	3/16	1/4	1/2	2	42528216
3/16	3/16	1/4	3/4	2-1/2	42527101
3/16	3/16	1/4	1-1/8	2-1/2	42527093
1/4	1/4	3/8	3/4	4	42527077
1/4	1/4	3/8	1-1/8	4	42528257
1/4	1/4	3/8	2-1/8	4	42527044
3/8	3/8	1/2	1-1/8	4	42527911
3/8	3/8	1/2	2-1/8	4	42527903
3/8	3/8	1/2	3-1/8	6	42527895
3/8	3/8	1/2	4-1/8	6	42527887
1/2	1/2	5/8	1-1/2	4	42527838
1/2	1/2	5/8	2-1/4	4	42527820
1/2	1/2	5/8	3-3/8	6	42527804
1/2	1/2	5/8	4-1/8	6	42527796

Mill Dia. (In.)	Shank Dia. (In.)	Length of Cut (In.)	Neck Length (In.)	Overall Length (In.)	Order #
5/8	5/8	3/4	1-5/8	4	42527721
5/8	5/8	3/4	2-3/8	6	42527713
5/8	5/8	3/4	3-3/8	6	42527705
5/8	5/8	3/4	4-1/8	6	42527697
3/4	3/4	1	2	4	42527556
3/4	3/4	1	2-1/2	6	42527549
3/4	3/4	1	3-3/8	6	42527531
3/4	3/4	1	4-1/8	6	42527523
1	1	1-1/4	2-1/4	4	42528158
1	1	1-1/4	2-5/8	6	42527218
1	1	1-1/4	3-3/8	6	42527200
1	1	1-1/4	4-1/8	6	42528174
1-1/4	1-1/4	1-1/2	2-1/4	5	42527945
1-1/4	1-1/4	1-1/2	2-5/8	6	42527291
1-1/4	1-1/4	1-1/2	3-3/8	6	42528133
1-1/4	1-1/4	1-1/2	4-1/8	6	42527283



## 5 Flute Variable Index Corner Radius End Mills

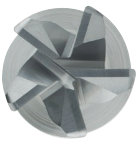
### Features:

- 5 Flute end mills used for roughing and finishing
- Eccentric ground OD with edge protection
- 38° helix with variable index for maximum metal removal and chip management
- Tool geometry improves tool engagement angle, increases chip load and easy evacuation
- New nano coating for higher hardness levels and increased lubricity
- Suitable for high speed machining and trochoidal tool paths
- Can be used in aerospace, automotive, energy, medical and mold & die
- Balanced Variable Index for reduced harmonics
- One tooth to center for improved floor finish
- Corner Radius strengthens the corner of the cutting end and allows for longer tool life



Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1/8	1/8	1/4	0.010	1-1/2	42504084
1/8	1/8	1/4	0.020	1-1/2	42504993
1/8	1/8	1/4	0.030	1-1/2	42504076
1/8	1/8	1/2	0.010	2	42505024
1/8	1/8	1/2	0.020	2	42504068
1/8	1/8	1/2	0.030	2	42504050
1/8	1/8	3/4	0.010	2-1/2	42505008
1/8	1/8	3/4	0.030	2-1/2	42504043
3/16	3/16	9/16	0.010	2	42503946
3/16	3/16	5/16	0.010	2	42503961
3/16	3/16	5/16	0.020	2	42505040
3/16	3/16	5/16	0.030	2	42503953
3/16	3/16	9/16	0.020	2	42514034
3/16	3/16	9/16	0.030	2	42514018
3/16	3/16	3/4	0.010	2-1/2	42514000
3/16	3/16	3/4	0.030	2-1/2	42513895
1/4	1/4	3/8	0.010	2	42513879
1/4	1/4	3/8	0.020	2	42513960
1/4	1/4	3/8	0.030	2	42513911
1/4	1/4	3/8	0.060	2	42516054
1/4	1/4	1/2	0.010	2-1/2	42516013
1/4	1/4	1/2	0.020	2-1/2	42516005
1/4	1/4	1/2	0.030	2-1/2	42515916
1/4	1/4	1/2	0.060	2-1/2	42515924

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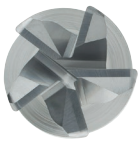
## 5 Flute Variable Index Corner Radius End Mills

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Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1/4	1/4	3/4	0.010	2-1/2	42515890
1/4	1/4	3/4	0.020	2-1/2	42515882
1/4	1/4	3/4	0.030	2-1/2	42515874
1/4	1/4	3/4	0.060	2-1/2	42515999
1/4	1/4	1	0.010	3	42515981
1/4	1/4	1	0.020	3	42515973
1/4	1/4	1	0.030	3	42515957
1/4	1/4	1	0.060	3	42515940
1/4	1/4	1-1/4	0.010	3	42515932
1/4	1/4	1-1/4	0.020	3	42515866
1/4	1/4	1-1/4	0.030	3	42515858
1/4	1/4	1-1/4	0.060	3	42514208
5/16	5/16	7/16	0.010	2	42514190
5/16	5/16	7/16	0.020	2	42514174
5/16	5/16	7/16	0.030	2	42514166
5/16	5/16	7/16	0.060	2	42514141
5/16	5/16	13/16	0.010	2-1/2	42514133
5/16	5/16	13/16	0.020	2-1/2	42514125
5/16	5/16	13/16	0.030	2-1/2	42514117
5/16	5/16	13/16	0.060	2-1/2	42514109
5/16	5/16	1	0.010	3	42514091
5/16	5/16	1	0.020	3	42514075
5/16	5/16	1	0.030	3	42514067
5/16	5/16	1	0.060	3	42514059
3/8	3/8	1/2	0.020	2	42514042
3/8	3/8	1/2	0.030	2	42515791
3/8	3/8	1/2	0.060	2	42515742
3/8	3/8	1/2	0.090	2	42515684
3/8	3/8	1	0.020	2-1/2	42515627
3/8	3/8	1	0.030	2-1/2	42515635
3/8	3/8	1	0.060	2-1/2	42515619
3/8	3/8	1	0.090	2-1/2	42515601
3/8	3/8	1-1/4	0.020	3	42515593
3/8	3/8	1-1/4	0.030	3	42515585
3/8	3/8	1-1/4	0.060	3	42515577
3/8	3/8	1-1/4	0.090	3	42515569
3/8	3/8	1-1/2	0.020	4	42515551
3/8	3/8	1-1/2	0.030	4	42515544
3/8	3/8	1-1/2	0.060	4	42515536
3/8	3/8	1-1/2	0.090	4	42515528

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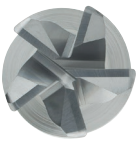
**5 Flute Variable Index Corner Radius End Mills**

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Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1/2	1/2	5/8	0.020	2-1/2	42515502
1/2	1/2	5/8	0.030	2-1/2	42515429
1/2	1/2	5/8	0.060	2-1/2	42515379
1/2	1/2	5/8	0.090	2-1/2	42514307
1/2	1/2	5/8	0.120	2-1/2	42514257
1/2	1/2	1	0.020	3	42515346
1/2	1/2	1	0.030	3	42515320
1/2	1/2	1	0.060	3	42515338
1/2	1/2	1	0.090	3	42515312
1/2	1/2	1	0.120	3	42515304
1/2	1/2	1-1/4	0.020	3	42515296
1/2	1/2	1-1/4	0.030	3	42515288
1/2	1/2	1-1/4	0.060	3	42515270
1/2	1/2	1-1/4	0.090	3	42515262
1/2	1/2	1-1/4	0.120	3	42515254
1/2	1/2	1-5/8	0.020	4	42515247
1/2	1/2	1-5/8	0.030	4	42515239
1/2	1/2	1-5/8	0.060	4	42515221
1/2	1/2	1-5/8	0.090	4	42515213
1/2	1/2	1-5/8	0.120	4	42515205
1/2	1/2	2	0.020	4	42515197
1/2	1/2	2	0.030	4	42515171
1/2	1/2	2	0.060	4	42515189
1/2	1/2	2	0.090	4	42515163
1/2	1/2	2	0.120	4	42515155
5/8	5/8	3/4	0.030	3	42515148
5/8	5/8	3/4	0.060	3	42515098
5/8	5/8	3/4	0.090	3	42515049
5/8	5/8	3/4	0.120	3	42514992
5/8	5/8	1-1/4	0.030	3-1/2	42514943
5/8	5/8	1-1/4	0.060	3-1/2	42514935
5/8	5/8	1-1/4	0.090	3-1/2	42514919
5/8	5/8	1-1/4	0.120	3-1/2	42514927
5/8	5/8	1-5/8	0.030	3-1/2	42514901
5/8	5/8	1-5/8	0.060	3-1/2	42514885
5/8	5/8	1-5/8	0.090	3-1/2	42514877
5/8	5/8	1-5/8	0.120	3-1/2	42514851
5/8	5/8	2-1/8	0.030	4	42514844
5/8	5/8	2-1/8	0.060	4	42514828
5/8	5/8	2-1/8	0.090	4	42514810

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**5 Flute Variable Index Corner Radius End Mills**

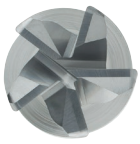
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Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
5/8	5/8	2-1/8	0.120	4	42514794
5/8	5/8	2-1/2	0.030	5	42514786
5/8	5/8	2-1/2	0.060	5	42514778
5/8	5/8	2-1/2	0.090	5	42514760
5/8	5/8	2-1/2	0.120	5	42514745
3/4	3/4	1	0.250	3	42514463
3/4	3/4	1	0.030	3	42514729
3/4	3/4	1	0.060	3	42514687
3/4	3/4	1	0.090	3	42514620
3/4	3/4	1	0.120	3	42514562
3/4	3/4	1	0.190	3	42514513
3/4	3/4	1-5/8	0.250	4	42514364
3/4	3/4	1-5/8	0.030	4	42514414
3/4	3/4	1-5/8	0.060	4	42514406
3/4	3/4	1-5/8	0.090	4	42514398
3/4	3/4	1-5/8	0.120	4	42514380
3/4	3/4	1-5/8	0.190	4	42514372
3/4	3/4	2-1/4	0.250	5	42521377
3/4	3/4	2-1/4	0.030	5	42514356
3/4	3/4	2-1/4	0.060	5	42514349
3/4	3/4	2-1/4	0.090	5	42514331
3/4	3/4	2-1/4	0.120	5	42521393
3/4	3/4	2-1/4	0.190	5	42521385
3/4	3/4	2-3/4	0.250	5	42521419
3/4	3/4	2-3/4	0.030	5	42521450
3/4	3/4	2-3/4	0.060	5	42521468
3/4	3/4	2-3/4	0.090	5	42521443
3/4	3/4	2-3/4	0.120	5	42521427
3/4	3/4	2-3/4	0.190	5	42521435
3/4	3/4	3-1/4	0.250	6	42521328
3/4	3/4	3-1/4	0.030	6	42521401
3/4	3/4	3-1/4	0.060	6	42521369
3/4	3/4	3-1/4	0.090	6	42521351
3/4	3/4	3-1/4	0.120	6	42521344
3/4	3/4	3-1/4	0.190	6	42521336
1	1	1-1/4	0.250	4	42505149
1	1	1-1/4	0.030	4	42505404
1	1	1-1/4	0.060	4	42505354
1	1	1-1/4	0.090	4	42505305
1	1	1-1/4	0.120	4	42505230

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## SOLID CARBIDE END MILLS

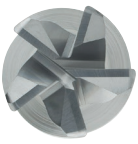
### 5 Flute Variable Index Corner Radius End Mills

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Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1	1	1-1/4	0.190	4	42505198
1	1	2	0.250	4	42504928
1	1	2	0.030	4	42505081
1	1	2	0.060	4	42505073
1	1	2	0.090	4	42505065
1	1	2	0.120	4	42505057
1	1	2	0.190	4	42504290
1	1	2-5/8	0.030	4	42504936
1	1	2-5/8	0.250	5	42504258
1	1	2-5/8	0.060	5	42504282
1	1	2-5/8	0.090	5	42504274
1	1	2-5/8	0.120	5	42504944
1	1	2-5/8	0.190	5	42504266
1	1	3-1/4	0.250	6	42504209
1	1	3-1/4	0.030	6	42504241
1	1	3-1/4	0.060	6	42504951
1	1	3-1/4	0.090	6	42504233
1	1	3-1/4	0.120	6	42504217
1	1	3-1/4	0.190	6	42504225
1	1	4-1/4	0.250	7	42504977
1	1	4-1/4	0.030	7	42504191
1	1	4-1/4	0.060	7	42504183
1	1	4-1/4	0.090	7	42504969
1	1	4-1/4	0.120	7	42504175
1	1	4-1/4	0.190	7	42504167
1-1/4	1-1/4	1-1/2	0.250	4-1/2	42505727
1-1/4	1-1/4	1-1/2	0.030	4-1/2	42504407
1-1/4	1-1/4	1-1/2	0.060	4-1/2	42504357
1-1/4	1-1/4	1-1/2	0.090	4-1/2	42504308
1-1/4	1-1/4	1-1/2	0.120	4-1/2	42505826
1-1/4	1-1/4	1-1/2	0.190	4-1/2	42505776
1-1/4	1-1/4	2	0.250	4-1/2	42505610
1-1/4	1-1/4	2	0.030	4-1/2	42505669
1-1/4	1-1/4	2	0.060	4-1/2	42505651
1-1/4	1-1/4	2	0.090	4-1/2	42505644
1-1/4	1-1/4	2	0.120	4-1/2	42505636
1-1/4	1-1/4	2	0.190	4-1/2	42505628
1-1/4	1-1/4	2-5/8	0.250	6	42505545
1-1/4	1-1/4	2-5/8	0.030	6	42505602
1-1/4	1-1/4	2-5/8	0.060	6	42505594

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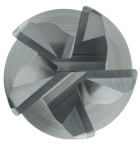


### 5 Flute Variable Index Corner Radius End Mills

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Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1-1/4	1-1/4	2-5/8	0.090	6	42505578
1-1/4	1-1/4	2-5/8	0.120	6	42505552
1-1/4	1-1/4	2-5/8	0.190	6	42505560
1-1/4	1-1/4	3-1/4	0.250	6	42505487
1-1/4	1-1/4	3-1/4	0.030	6	42505537
1-1/4	1-1/4	3-1/4	0.060	6	42505529
1-1/4	1-1/4	3-1/4	0.090	6	42505511
1-1/4	1-1/4	3-1/4	0.120	6	42505503
1-1/4	1-1/4	3-1/4	0.190	6	42505495
1-1/4	1-1/4	4-1/2	0.250	7	42505412
1-1/4	1-1/4	4-1/2	0.030	7	42505479
1-1/4	1-1/4	4-1/2	0.060	7	42505461
1-1/4	1-1/4	4-1/2	0.090	7	42505446
1-1/4	1-1/4	4-1/2	0.120	7	42505438
1-1/4	1-1/4	4-1/2	0.190	7	42505420



**5 Flute Variable Index Extended Reach Corner Radius End Mills**

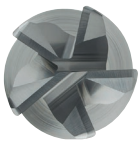
**Features:**

- 5 Flute end mills used for roughing and finishing
- Eccentric ground OD with edge protection
- 38° helix with variable index for maximum metal removal and chip management
- Tool geometry improves tool engagement angle, increases chip load and easy evacuation
- New nano coating for higher hardness levels and increased lubricity
- Suitable for high speed machining and trochoidal tool paths
- Can be used in aerospace, automotive, energy, medical and mold & die
- Balanced Variable Index for reduced harmonics
- One tooth to center for improved floor finish
- Extended Reach tools provide strength and rigidity for deep pocketing applications
- Corner Radius strengthens the corner of the cutting end and allows for longer tool life



Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Neck Length (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1/8	1/8	3/16	3/8	0.010	2	42504159
1/8	1/8	3/16	3/8	0.020	2	42504126
1/8	1/8	3/16	3/8	0.030	2	42504100
1/8	1/8	3/16	1/2	0.010	2	42504142
1/8	1/8	3/16	1/2	0.020	2	42504118
1/8	1/8	3/16	1/2	0.030	2	42504985
1/8	1/8	3/16	3/4	0.010	2-1/2	42504134
1/8	1/8	3/16	3/4	0.030	2-1/2	42504092
3/16	3/16	1/4	1/2	0.010	2	42504035
3/16	3/16	1/4	1/2	0.020	2	42504019
3/16	3/16	1/4	1/2	0.030	2	42503995
3/16	3/16	1/4	1/2	0.030	2-1/2	42503987
3/16	3/16	1/4	3/4	0.010	2-1/2	42504027
3/16	3/16	1/4	3/4	0.020	2-1/2	42504001
3/16	3/16	1/4	1-1/8	0.010	2-1/2	42505016
3/16	3/16	1/4	1-1/8	0.030	2-1/2	42503979
1/4	1/4	3/8	3/4	0.010	4	42513994
1/4	1/4	3/8	3/4	0.020	4	42513952
1/4	1/4	3/8	3/4	0.030	4	42513929
1/4	1/4	3/8	3/4	0.060	4	42516047
1/4	1/4	3/8	1-1/8	0.010	4	42513986
1/4	1/4	3/8	1-1/8	0.020	4	42513945
1/4	1/4	3/8	1-1/8	0.030	4	42516070
1/4	1/4	3/8	1-1/8	0.060	4	42516021

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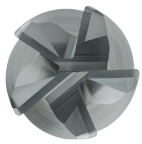
**5 Flute Variable Index Extended Reach Corner Radius End Mills**

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Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Neck Length (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1/4	1/4	3/8	2-1/8	0.010	4	42513978
1/4	1/4	3/8	2-1/8	0.020	4	42513937
1/4	1/4	3/8	2-1/8	0.030	4	42516062
1/4	1/4	3/8	2-1/8	0.060	4	42516039
3/8	3/8	1/2	1-1/8	0.020	4	42515841
3/8	3/8	1/2	1-1/8	0.030	4	42515783
3/8	3/8	1/2	1-1/8	0.060	4	42515734
3/8	3/8	1/2	1-1/8	0.090	4	42515676
3/8	3/8	1/2	2-1/8	0.020	4	42515833
3/8	3/8	1/2	2-1/8	0.030	4	42515775
3/8	3/8	1/2	2-1/8	0.060	4	42515718
3/8	3/8	1/2	2-1/8	0.090	4	42515668
3/8	3/8	1/2	3-1/8	0.020	6	42515817
3/8	3/8	1/2	3-1/8	0.030	6	42515767
3/8	3/8	1/2	3-1/8	0.060	6	42515700
3/8	3/8	1/2	3-1/8	0.090	6	42515650
3/8	3/8	1/2	4-1/8	0.020	6	42515809
3/8	3/8	1/2	4-1/8	0.030	6	42515759
3/8	3/8	1/2	4-1/8	0.060	6	42515692
3/8	3/8	1/2	4-1/8	0.090	6	42515643
1/2	1/2	5/8	1-1/2	0.020	4	42515494
1/2	1/2	5/8	1-1/2	0.030	4	42515445
1/2	1/2	5/8	1-1/2	0.060	4	42515361
1/2	1/2	5/8	1-1/2	0.090	4	42514299
1/2	1/2	5/8	1-1/2	0.120	4	42514240
1/2	1/2	5/8	2-1/4	0.020	4	42515486
1/2	1/2	5/8	2-1/4	0.030	4	42515411
1/2	1/2	5/8	2-1/4	0.060	4	42515353
1/2	1/2	5/8	2-1/4	0.090	4	42514281
1/2	1/2	5/8	2-1/4	0.120	4	42514232
1/2	1/2	5/8	3-3/8	0.020	6	42515460
1/2	1/2	5/8	3-3/8	0.030	6	42515395
1/2	1/2	5/8	3-3/8	0.060	6	42514323
1/2	1/2	5/8	3-3/8	0.090	6	42514273
1/2	1/2	5/8	3-3/8	0.120	6	42514216
1/2	1/2	5/8	4-1/8	0.020	6	42515452
1/2	1/2	5/8	4-1/8	0.030	6	42515387
1/2	1/2	5/8	4-1/8	0.060	6	42514315
1/2	1/2	5/8	4-1/8	0.090	6	42514265
1/2	1/2	5/8	4-1/8	0.120	6	42514224

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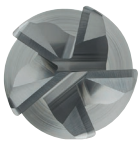
**5 Flute Variable Index Extended Reach Corner Radius End Mills**

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Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Neck Length (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
5/8	5/8	3/4	1-5/8	0.030	4	42515130
5/8	5/8	3/4	1-5/8	0.060	4	42515080
5/8	5/8	3/4	1-5/8	0.090	4	42515031
5/8	5/8	3/4	1-5/8	0.120	4	42514984
5/8	5/8	3/4	2-3/8	0.030	6	42515122
5/8	5/8	3/4	2-3/8	0.060	6	42515072
5/8	5/8	3/4	2-3/8	0.090	6	42515023
5/8	5/8	3/4	2-3/8	0.120	6	42514968
5/8	5/8	3/4	3-3/8	0.030	6	42515114
5/8	5/8	3/4	3-3/8	0.060	6	42515064
5/8	5/8	3/4	3-3/8	0.090	6	42515015
5/8	5/8	3/4	3-3/8	0.120	6	42514976
5/8	5/8	3/4	4-1/8	0.030	6	42515106
5/8	5/8	3/4	4-1/8	0.060	6	42515056
5/8	5/8	3/4	4-1/8	0.090	6	42515007
5/8	5/8	3/4	4-1/8	0.120	6	42514950
3/4	3/4	1	2	0.030	4	42514737
3/4	3/4	1	2	0.060	4	42514661
3/4	3/4	1	2	0.090	4	42514612
3/4	3/4	1	2	0.120	4	42514554
3/4	3/4	1	2	0.190	4	42514505
3/4	3/4	1	2	0.250	4	42514455
3/4	3/4	1	2-1/2	0.030	6	42514703
3/4	3/4	1	2-1/2	0.060	6	42514653
3/4	3/4	1	2-1/2	0.090	6	42514604
3/4	3/4	1	2-1/2	0.120	6	42514547
3/4	3/4	1	2-1/2	0.190	6	42514497
3/4	3/4	1	2-1/2	0.250	6	42514448
3/4	3/4	1	3-3/8	0.030	6	42514711
3/4	3/4	1	3-3/8	0.060	6	42514646
3/4	3/4	1	3-3/8	0.090	6	42514596
3/4	3/4	1	3-3/8	0.120	6	42514539
3/4	3/4	1	3-3/8	0.190	6	42514489
3/4	3/4	1	3-3/8	0.250	6	42514430
3/4	3/4	1	4-1/8	0.030	6	42514695
3/4	3/4	1	4-1/8	0.060	6	42514638
3/4	3/4	1	4-1/8	0.090	6	42514588
3/4	3/4	1	4-1/8	0.120	6	42514521
3/4	3/4	1	4-1/8	0.190	6	42514471
3/4	3/4	1	4-1/8	0.250	6	42514422

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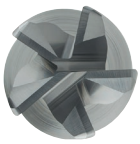
**5 Flute Variable Index Extended Reach Corner Radius End Mills**

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Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Neck Length (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1	1	1-1/4	2-1/4	0.030	4	42505396
1	1	1-1/4	2-1/4	0.060	4	42505347
1	1	1-1/4	2-1/4	0.090	4	42505289
1	1	1-1/4	2-1/4	0.120	4	42505248
1	1	1-1/4	2-1/4	0.190	4	42505180
1	1	1-1/4	2-1/4	0.250	4	42505123
1	1	1-1/4	2-5/8	0.030	6	42505388
1	1	1-1/4	2-5/8	0.060	6	42505339
1	1	1-1/4	2-5/8	0.090	6	42505263
1	1	1-1/4	2-5/8	0.120	6	42505222
1	1	1-1/4	2-5/8	0.190	6	42505172
1	1	1-1/4	2-5/8	0.250	6	42505115
1	1	1-1/4	3-3/8	0.030	6	42505362
1	1	1-1/4	3-3/8	0.060	6	42505321
1	1	1-1/4	3-3/8	0.090	6	42505271
1	1	1-1/4	3-3/8	0.120	6	42505214
1	1	1-1/4	3-3/8	0.190	6	42505164
1	1	1-1/4	3-3/8	0.250	6	42505107
1	1	1-1/4	4-1/8	0.030	6	42505370
1	1	1-1/4	4-1/8	0.060	6	42505313
1	1	1-1/4	4-1/8	0.090	6	42505255
1	1	1-1/4	4-1/8	0.120	6	42505206
1	1	1-1/4	4-1/8	0.190	6	42505156
1	1	1-1/4	4-1/8	0.250	6	42505099
1-1/4	1-1/4	1-1/2	2-1/4	0.030	5	42504399
1-1/4	1-1/4	1-1/2	2-1/4	0.060	5	42504340
1-1/4	1-1/4	1-1/2	2-1/4	0.090	5	42505867
1-1/4	1-1/4	1-1/2	2-1/4	0.120	5	42505818
1-1/4	1-1/4	1-1/2	2-1/4	0.190	5	42505750
1-1/4	1-1/4	1-1/2	2-1/4	0.250	5	42505701
1-1/4	1-1/4	1-1/2	2-5/8	0.030	6	42504381
1-1/4	1-1/4	1-1/2	2-5/8	0.060	6	42504332
1-1/4	1-1/4	1-1/2	2-5/8	0.090	6	42505859
1-1/4	1-1/4	1-1/2	2-5/8	0.120	6	42505800
1-1/4	1-1/4	1-1/2	2-5/8	0.190	6	42505768
1-1/4	1-1/4	1-1/2	2-5/8	0.250	6	42505693
1-1/4	1-1/4	1-1/2	3-3/8	0.030	6	42504365
1-1/4	1-1/4	1-1/2	3-3/8	0.060	6	42504324
1-1/4	1-1/4	1-1/2	3-3/8	0.090	6	42505842
1-1/4	1-1/4	1-1/2	3-3/8	0.120	6	42505792

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## SOLID CARBIDE END MILLS

### 5 Flute Variable Index Extended Reach Corner Radius End Mills

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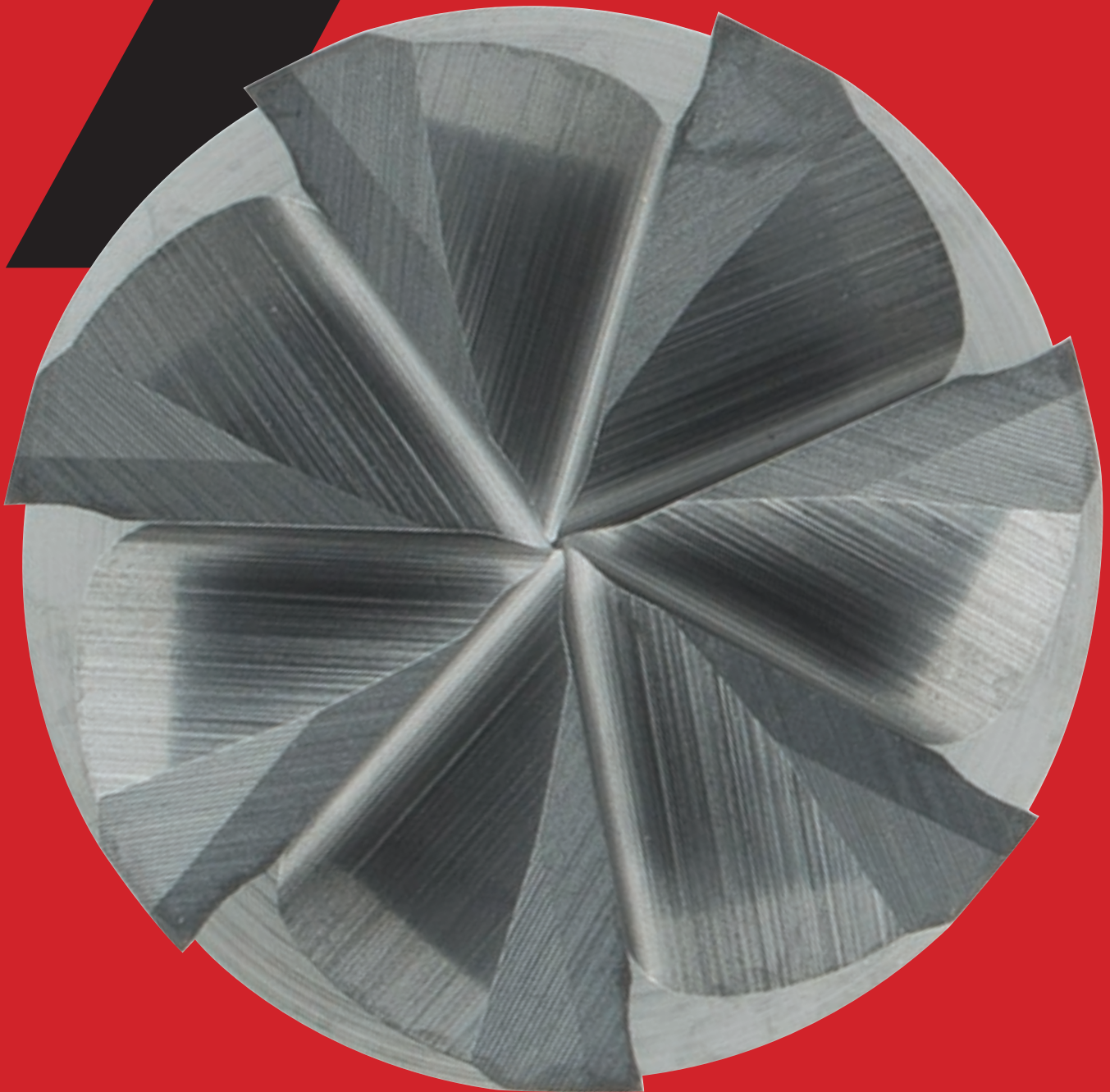


Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Neck Length (In.)	Corner Radius (In.)	Overall Length (In.)	Order #
1-1/4	1-1/4	1-1/2	3-3/8	0.190	6	42505743
1-1/4	1-1/4	1-1/2	3-3/8	0.250	6	42505685
1-1/4	1-1/4	1-1/2	4-1/8	0.030	6	42504373
1-1/4	1-1/4	1-1/2	4-1/8	0.060	6	42504316
1-1/4	1-1/4	1-1/2	4-1/8	0.090	6	42505834
1-1/4	1-1/4	1-1/2	4-1/8	0.120	6	42505784
1-1/4	1-1/4	1-1/2	4-1/8	0.190	6	42505735
1-1/4	1-1/4	1-1/2	4-1/8	0.250	6	42505677

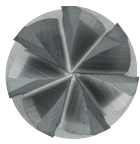
# ACCUPRO<sup>®</sup> 7 FLUTE SOLID CARBIDE END MILLS

- Equal-Index Finisher
- Profile and Peripheral Cutting Only
- 38° Helix Non-Center Cutting
- Great for Hard Materials and Titanium
- Maximum Metal Removal and Tool Life
- Solid Micrograin Carbide

AlTiCrN is a multi-layered nanocomposite made up of aluminum chromium titanium nitride. It offers increased performance at high-speeds, improved edge toughness and long tool life. The titanium reduces the adhesive wear compared to conventional AlCrN coatings. It is commonly used for stainless steel, titanium, high temperature alloys and hardened tool steels 35HRC or greater.







## SOLID CARBIDE END MILLS

### 7 Flute Equal-Index Square End Mills

#### Features:

- 7 Flute end mills used for profile and peripheral cutting only
- Eccentric ground OD with edge protection
- 38° helix non-center cutting
- Great for hard materials and titanium
- Maximum metal removal and tool life
- Tool geometry improves tool engagement angle, increases chip load and easy evacuation
- New nano coating for higher hardness levels and increased lubricity
- Suitable for high speed machining and trochoidal tool paths
- Can be used in aerospace, automotive, energy, medical and mold & die



Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Overall Length (In.)	Order #
1/4	1/4	3/8	2	42528331
1/4	1/4	1/2	2-1/2	42528372
1/4	1/4	3/4	2-1/2	42527424
1/4	1/4	1-1/4	3	42527416
1/4	1/4	1-3/4	4	42528380
5/16	5/16	7/16	2	42527408
5/16	5/16	13/16	2-1/2	42527390
5/16	5/16	1-3/8	3	42527382
5/16	5/16	2	4	42527374
3/8	3/8	1/2	2	42527366
3/8	3/8	7/8	2-1/2	42527358
3/8	3/8	1	2-1/2	42528398
3/8	3/8	1-1/2	4	42528406
3/8	3/8	2-1/2	6	42527341
7/16	7/16	9/16	2-1/2	42528414
7/16	7/16	1	2-3/4	42527333
7/16	7/16	1-1/2	3-1/2	42527325
7/16	7/16	2-3/4	5	42528422
1/2	1/2	3/4	2-1/2	42527317

Mill Diameter (In.)	Shank Diameter (In.)	Length of Cut (In.)	Overall Length (In.)	Order #
1/2	1/2	1-1/4	3	42527309
1/2	1/2	2	4	42528430
1/2	1/2	3-1/4	6	42527671
5/8	5/8	3/4	3	42527663
5/8	5/8	1-5/8	3-1/2	42527648
5/8	5/8	2	5	42528448
5/8	5/8	3-1/4	6	42527622
3/4	3/4	1	3	42528455
3/4	3/4	1-5/8	4	42527614
3/4	3/4	2-1/4	5	42527606
3/4	3/4	3-1/4	6	42528463
1	1	1-1/4	4	42527432
1	1	2	5	42528315
1	1	3-1/4	6	42528356
1	1	4-1/8	7	42528349
1-1/4	1-1/4	2	4-1/2	42527465
1-1/4	1-1/4	2-5/8	4-1/2	42527457
1-1/4	1-1/4	3-1/4	6	42528323
1-1/4	1-1/4	5	7-1/2	42527440

# ACCUPRO<sup>®</sup> APPLICATIONS

## Raise your expectations

Accupro<sup>®</sup> HS series end mills give you reliable, high-performance cutting tools at an exceptional value. Designed for maximum versatility, choose our 4, 5 and 7 flute end mills for a variety of materials and applications.



**ENERGY**



**AEROSPACE**



**AUTOMOTIVE**



**MEDICAL**



**MOLD AND DIE INDUSTRIES**

# SPEED & FEED GUIDE: 4 FLUTE



MATERIAL			DIAMETER																							
	AXIAL DOC ↓	RADIAL DOC →	1/8			1/4			3/8			1/2			5/8			3/4			1					
			RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT			
<b>Carbon Steel</b>	10XX, 11XX	Full Slot	1 x D	1 x D	<b>220</b>	6723	13	0.0005	3362	13	0.0010	2241	16	0.0018	1681	17	0.0025	1345	16	0.0030	1121	15	0.0033	840	15	0.0043
	12XX, 13XX	30% Radial	1.25 x D	.3 x D	<b>264</b>	8068	19	0.0006	4034	19	0.0012	2689	23	0.0022	2017	24	0.0030	1614	23	0.0036	1345	21	0.0040	1008	21	0.0052
		10% Radial	1.5 x D	.1 x D	<b>343</b>	10488	34	0.0008	5244	34	0.0016	3496	40	0.0029	2622	42	0.0040	2098	41	0.0048	1748	37	0.0053	1311	36	0.0069
		5% Radial	2 x D	.05 x D	<b>378</b>	11537	81	0.0010	5769	81	0.0020	3846	97	0.0036	2884	102	0.0050	2307	98	0.0060	1923	90	0.0067	1442	87	0.0086
<b>Alloy Steel</b>	40XX, 41XX, 42XX	Full Slot	1 x D	1 x D	<b>180</b>	5501	11	0.0005	2750	8	8E-04	1834	7	0.0009	1375	7	0.0013	1100	7	0.0015	917	6	0.0017	688	6	0.0022
	44XX, 48XX, 86XX	30% Radial	1.25 x D	.3 x D	<b>225</b>	6876	17	0.0006	3438	12	9E-04	2292	10	0.0011	1719	10	0.0015	1375	10	0.0018	1146	9	0.0020	860	9	0.0026
		10% Radial	1.5 x D	.1 x D	<b>270</b>	8251	26	0.0008	4126	20	0.0012	750	16	0.0014	2063	17	0.0020	1650	16	0.0024	1375	15	0.0027	1031	14	0.0035
		5% Radial	2 x D	.05 x D	<b>297</b>	9076	64	0.0010	4538	64	0.0020	3025	76	0.0036	2269	80	0.0050	1815	77	0.0060	1513	70	0.0067	1135	69	0.0086
<b>Tool Steel</b>	A2, A3, D2, H11, H13	50% Radial	1 x D	1 x D	<b>180</b>	5501	11	0.0005	2750	11	0.0010	1834	13	0.0018	1375	14	0.0025	1100	13	0.0030	917	12	0.0033	688	12	0.0043
	M1, O-1, S-7, NAK 55	30% Radial	1.25 x D	.3 x D	<b>225</b>	6876	17	0.0006	3438	17	0.0012	2292	20	0.0022	1719	21	0.0030	1375	20	0.0036	1146	18	0.0040	860	18	0.0052
		10% Radial	1.5 x D	.1 x D	<b>270</b>	8251	26	0.0008	4126	26	0.0016	2750	32	0.0029	2063	33	0.0040	1650	32	0.0048	1375	29	0.0053	1031	29	0.0069
		5% Radial	2 x D	.05 x D	<b>297</b>	9076	64	0.0010	4538	64	0.0020	3025	76	0.0036	2269	80	0.0050	1815	77	0.0060	1513	70	0.0067	1135	69	0.0086
<b>Cast Iron-Gray</b>	Grey, GG-10 to GG-40	Full Slot	1 x D	1 x D	<b>100</b>	3056	6	0.0005	1528	6	0.0010	1019	7	0.0018	764	8	0.0025	611	7	0.0030	509	7	0.0033	382	7	0.0043
		30% Radial	1.25 x D	.3 x D	<b>125</b>	3820	9	0.0006	1910	9	0.0012	1273	11	0.0022	955	12	0.0030	764	11	0.0036	637	10	0.0040	478	10	0.0052
		10% Radial	1.5 x D	.1 x D	<b>163</b>	4966	16	0.0008	2483	16	0.0016	1655	19	0.0029	1242	20	0.0040	993	19	0.0048	828	18	0.0053	621	17	0.0069
		5% Radial	2 x D	.05 x D	<b>179</b>	5463	38	0.0010	2731	38	0.0020	1821	46	0.0036	1366	48	0.0050	1093	46	0.0060	910	42	0.0067	683	41	0.0086
<b>Cast Iron-Gray Malleable</b>	Ductile (Nodular)	Full Slot	.75 x D	1 x D	<b>155</b>	4737	9	0.0005	2368	9	0.0010	1579	11	0.0018	1184	12	0.0025	947	11	0.0030	789	11	0.0033	592	10	0.0043
	Malleable	30% Radial	1.25 x D	.3 x D	<b>180</b>	5501	13	0.0006	2750	13	0.0012	1834	16	0.0022	1375	17	0.0030	1100	16	0.0036	917	15	0.0040	688	14	0.0052
	GGG-40, to GGG-70	10% Radial	1.5 x D	.1 x D	<b>163</b>	4966	16	0.0008	2483	16	0.0016	1655	19	0.0029	1242	20	0.0040	993	19	0.0048	828	18	0.0053	621	17	0.0069
		5% Radial	2 x D	.05 x D	<b>238</b>	7261	51	0.0010	3631	51	0.0020	2420	61	0.0036	1815	64	0.0050	1452	61	0.0060	1210	56	0.0067	908	55	0.0086
<b>SS 300 &amp; 400 Series</b>	303, 304, 316, 312	Full Slot	.75 x D	1 x D	<b>140</b>	4278	9	0.0005	2139	9	0.0010	1426	10	0.0018	1070	11	0.0025	856	10	0.0030	713	9	0.0033	535	9	0.0043
	420, 420F, 416, 440	30% Radial	1.25 x D	.3 x D	<b>185</b>	5654	14	0.0006	2827	14	0.0012	1885	16	0.0022	1413	17	0.0030	1131	16	0.0036	942	15	0.0040	707	15	0.0052
		10% Radial	1.5 x D	.1 x D	<b>230</b>	7039	23	0.0008	3519	23	0.0016	2346	27	0.0029	1760	28	0.0040	1408	27	0.0048	1173	25	0.0053	880	24	0.0069
		5% Radial	2 x D	.05 x D	<b>253</b>	7743	54	0.0010	3871	54	0.0020	2581	65	0.0036	1936	68	0.0050	1549	66	0.0060	1290	60	0.0067	968	59	0.0086
<b>Precipitation SS</b>	15-5, 16-6, 17-4, 17-5	Full Slot	0.5	1 x D	<b>115</b>	3514	7	0.0005	1757	7	0.0010	1171	8	0.0018	879	9	0.0025	703	9	0.0030	586	8	0.0033	439	8	0.0043
		30% Radial	1.25 x D	.3 x D	<b>180</b>	5501	13	0.0006	2750	13	0.0012	1834	16	0.0022	1375	17	0.0030	1100	16	0.0036	917	15	0.0040	688	14	0.0052
		10% Radial	1.5 x D	.1 x D	<b>250</b>	7640	24	0.0008	3820	24	0.0016	2547	29	0.0029	1910	31	0.0040	1528	30	0.0048	1273	27	0.0053	955	26	0.0069
		5% Radial	2 x D	.05 x D	<b>275</b>	8404	59	0.0010	4202	59	0.0020	2801	71	0.0036	2101	74	0.0050	1681	71	0.0060	1401	65	0.0067	1051	64	0.0086
<b>High Temp Alloys</b>	Inconel 625, 718, Rene	40% Radial	.25 x D	1 x D	<b>70</b>	2139	4	0.0005	1070	4	0.0010	713	5	0.0018	535	5	0.0025	428	5	0.0030	357	5	0.0033	267	5	0.0043
	Hastalloy, Haynes, A286	20% Radial	1.25 x D	.3 x D	<b>80</b>	2445	6	0.0006	1222	6	0.0012	815	7	0.0022	611	7	0.0030	489	7	0.0036	407	7	0.0040	306	6	0.0052
	Waspalloy, Cobalt Chrome	7% Radial	1.5 x D	.1 x D	<b>125</b>	3820	12	0.0008	1910	12	0.0016	1273	15	0.0029	955	15	0.0040	764	15	0.0048	637	14	0.0053	478	13	0.0069
		5% Radial	2 x D	.05 x D	<b>138</b>	4202	29	0.0010	2101	29	0.0020	1401	35	0.0036	1051	37	0.0050	840	36	0.0060	700	33	0.0067	525	32	0.0086
<b>Titanium [6AL4V]</b>	Grades (5-38)	Full Slot	0.5	1 x D	<b>180</b>	5501	11	0.0005	2750	11	0.0010	1834	13	0.0018	1375	14	0.0025	1100	13	0.0030	917	12	0.0033	688	12	0.0043
		30% Radial	1.25 x D	.3 x D	<b>250</b>	7640	18	0.0006	3820	18	0.0012	2547	22	0.0022	1910	23	0.0030	1528	22	0.0036	1273	20	0.0040	955	20	0.0052
		10% Radial	1.5 x D	.1 x D	<b>325</b>	9932	32	0.0008	4966	32	0.0016	3311	38	0.0029	2483	40	0.0040	1986	38	0.0048	1655	35	0.0053	1242	34	0.0069
		5% Radial	2 x D	.05 x D	<b>358</b>	10925	76	0.0010	5463	76	0.0020	3642	92	0.0036	2731	96	0.0050	2185	93	0.0060	1821	85	0.0067	1366	83	0.0086

CPT: Chip per tooth  
 SFM: Surface feet per minute  
 IPM: Inches per minute  
 DOC: Depth cut  
 FPT: Feed per tooth

SFM = .262 x Dia. x RPM  
 RPM = 3.82 x SFM/DIA.  
 IPM = FPT x No. Teeth x RPM  
 FPT = IPM / (No. Teeth x RPM)

# SPEED & FEED GUIDE: 5 FLUTE



MATERIAL	AXIAL DOC ↓	RADIAL DOC →	SFM	DIAMETER																							
				1/8			1/4			3/8			1/2			5/8			3/4			1					
				RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT			
<b>Carbon Steel</b>	10XX, 11XX	Full Slot	.75 x D	1 x D	<b>220</b>	6723	17	0.0005	3362	17	0.0010	2241	20	0.0018	1681	21	0.0025	1345	20	0.0030	1121	19	0.0033	840	18	0.0043	
	12XX, 13XX	30% Radial	1.25 x D	.3 x D	<b>264</b>	8068	24	0.0006	4034	24	0.0012	2689	29	0.0022	2017	30	0.0030	1614	29	0.0036	1345	27	0.0040	1008	26	0.0052	
		10% Radial	1.5 x D	.1 x D	<b>343</b>	10488	42	0.0008	5244	42	0.0016	3496	50	0.0029	2622	53	0.0040	2098	51	0.0048	1748	47	0.0053	1311	45	0.0069	
		5% Radial	2 x D	.05 x D	<b>378</b>	11537	81	0.0010	5769	81	0.0020	3846	97	0.0036	2884	102	0.0050	2307	98	0.0060	1923	90	0.0067	1442	87	0.0086	
<b>Alloy Steel</b>	40XX, 41XX, 42XX	Full Slot	.75 x D	1 x D	<b>180</b>	5501	8	0.0005	2750	10	8E-04	1834	8	0.0009	1375	9	0.0013	1100	8	0.0015	917	8	0.0017	688	7	0.0022	
	44XX, 48XX, 86XX	30% Radial	1.25 x D	.3 x D	<b>225</b>	6876	12	0.0006	3438	15	9E-04	2292	12	0.0011	1719	13	0.0015	1375	12	0.0018	1146	11	0.0020	860	11	0.0026	
		10% Radial	1.5 x D	.1 x D	<b>270</b>	8251	20	0.0008	4126	25	0.001	2750	20	0.0014	2063	21	0.0020	1650	20	0.0024	1375	18	0.0027	1031	18	0.0035	
		5% Radial	2 x D	.05 x D	<b>297</b>	9076	64	0.0010	4538	64	0.0020	3025	76	0.0036	2269	80	0.0050	1815	77	0.0060	1513	70	0.0067	135	69	0.0086	
<b>Tool Steel</b>	A2, A3, D2, H11, H13	50% Radial	.75 x D	1 x D	<b>180</b>	5501	14	0.0005	2750	14	0.0010	1834	17	0.0018	1375	17	0.0025	1100	17	0.0030	917	15	0.0033	688	15	0.0043	
	M1, O-1, S-7, NAK 55	30% Radial	1.25 x D	.3 x D	<b>225</b>	6876	21	0.0006	3438	21	0.0012	2292	25	0.0022	1719	26	0.0030	1375	25	0.0036	1146	23	0.0040	860	22	0.0052	
		10% Radial	1.5 x D	.1 x D	<b>270</b>	8251	33	0.0008	4126	33	0.0016	2750	40	0.0029	2063	42	0.0040	1650	40	0.0048	1375	37	0.0053	1031	36	0.0069	
		5% Radial	2 x D	.05 x D	<b>297</b>	9076	64	0.0010	4538	64	0.0020	3025	76	0.0036	2269	80	0.0050	1815	77	0.0060	1513	70	0.0067	135	69	0.0086	
<b>Cast Iron-Gray</b>	Grey, GG-10 to GG-40	Full Slot	.75 x D	1 x D	<b>100</b>	3056	8	0.0005	1528	8	0.0010	1019	9	0.0018	764	10	0.0025	611	9	0.0030	509	8	0.0033	382	8	0.0043	
		30% Radial	1.25 x D	.3 x D	<b>125</b>	3820	11	0.0006	1910	11	0.0012	1273	14	0.0022	955	14	0.0030	764	14	0.0036	637	13	0.0040	478	12	0.0052	
		10% Radial	1.5 x D	.1 x D	<b>163</b>	4966	20	0.0008	2483	20	0.0016	1655	24	0.0029	1242	25	0.0040	993	24	0.0048	828	22	0.0053	621	21	0.0069	
		5% Radial	2 x D	.05 x D	<b>179</b>	5463	38	0.0010	2731	38	0.0020	1821	46	0.0036	1366	48	0.0050	1093	46	0.0060	910	42	0.0067	683	41	0.0086	
<b>Cast Iron-Gray Malleable</b>	Ductile (Nodular)	Full Slot	.75 x D	1 x D	<b>155</b>	4737	12	0.0005	2368	12	0.0010	1579	14	0.0018	1184	15	0.0025	947	14	0.0030	789	13	0.0033	592	13	0.0043	
	Malleable	30% Radial	1.25 x D	.3 x D	<b>180</b>	5501	17	0.0006	2750	17	0.0012	1834	20	0.0022	1375	21	0.0030	1100	20	0.0036	917	18	0.0040	688	18	0.0052	
	GGG-40, to GGG-70	10% Radial	1.5 x D	.1 x D	<b>216</b>	6601	26	0.0008	3300	26	0.0016	2200	32	0.0029	1650	33	0.0040	1320	32	0.0048	1100	29	0.0053	825	29	0.0069	
		5% Radial	2 x D	.05 x D	<b>238</b>	7261	51	0.0010	3631	51	0.0020	2420	61	0.0036	1815	64	0.0050	1452	61	0.0060	1210	56	0.0067	908	55	0.0086	
<b>SS 300 &amp; 400 Series</b>	303, 304, 316, 312	Full Slot	.75 x D	1 x D	<b>140</b>	4278	11	0.0005	2139	11	0.0010	1426	13	0.0018	1070	13	0.0025	856	13	0.0030	713	12	0.0033	535	12	0.0043	
	420, 420F, 416, 440	30% Radial	1.25 x D	.3 x D	<b>185</b>	5654	17	0.0006	2827	17	0.0012	1885	20	0.0022	1413	21	0.0030	1131	21	0.0036	942	19	0.0040	707	18	0.0052	
		10% Radial	1.5 x D	.1 x D	<b>230</b>	7039	28	0.0008	3519	28	0.0016	2346	34	0.0029	1760	35	0.0040	1408	34	0.0048	1173	31	0.0053	880	30	0.0069	
		5% Radial	2 x D	.05 x D	<b>253</b>	7743	54	0.0010	3871	54	0.0020	2581	65	0.0036	1936	68	0.0050	1549	66	0.0060	1290	60	0.0067	968	59	0.0086	
<b>Precipitation SS</b>	15-5, 16-6, 17-4, 17-5	Full Slot	0.5	1 x D	<b>115</b>	3514	9	0.0005	1757	9	0.0010	1171	11	0.0018	879	11	0.0025	703	11	0.0030	586	10	0.0033	439	9	0.0043	
		30% Radial	1.25 x D	.3 x D	<b>180</b>	5501	17	0.0006	2750	17	0.0012	1834	20	0.0022	1375	21	0.0030	1100	20	0.0036	917	18	0.0040	688	18	0.0052	
		10% Radial	1.5 x D	.1 x D	<b>250</b>	7640	31	0.0008	3820	31	0.0016	2547	37	0.0029	1910	39	0.0040	1528	37	0.0048	1273	34	0.0053	955	33	0.0069	
		5% Radial	2 x D	.05 x D	<b>275</b>	8404	59	0.0010	4202	59	0.0020	2801	71	0.0036	2101	74	0.0050	1681	71	0.0060	1401	65	0.0067	1051	64	0.0086	
<b>High Temp Alloys</b>	Inconel 625, 718, Rene	40% Radial	.5 x D	1 x D	<b>70</b>	2139	5	0.0005	1070	5	0.0010	713	6	0.0018	535	7	0.0025	428	6	0.0030	357	6	0.0033	267	6	0.0043	
	Hastalloy, Haynes, A286	20% Radial	1.25 x D	.3 x D	<b>80</b>	2445	7	0.0006	1222	7	0.0012	815	9	0.0022	611	9	0.0030	489	9	0.0036	407	8	0.0040	306	8	0.0052	
	Waspalloy, Cobalt Chrome	7% Radial	1.5 x D	.1 x D	<b>125</b>	3820	15	0.0008	1910	15	0.0016	1273	18	0.0029	955	19	0.0040	764	18	0.0048	637	17	0.0053	478	17	0.0069	
		5% Radial	2 x D	.05 x D	<b>138</b>	4202	29	0.0010	2101	29	0.0020	1401	35	0.0036	1051	37	0.0050	840	36	0.0060	700	33	0.0067	525	32	0.0086	
<b>Titanium [6AL4V]</b>	Grades (5-38)	Full Slot	0.5	1 x D	<b>180</b>	5501	14	0.0005	2750	14	0.0010	1834	17	0.0018	1375	17	0.0025	1100	17	0.0030	917	15	0.0033	688	15	0.0043	
		30% Radial	1.25 x D	.3 x D	<b>250</b>	7640	23	0.0006	3820	23	0.0012	2547	28	0.0022	1910	29	0.0030	1528	28	0.0036	1273	25	0.0040	955	25	0.0052	
		10% Radial	1.5 x D	.1 x D	<b>325</b>	9932	40	0.0008	4966	40	0.0016	3311	48	0.0029	2483	50	0.0040	1986	48	0.0048	1655	44	0.0053	1242	43	0.0069	
		5% Radial	2 x D	.05 x D	<b>358</b>	10925	76	0.0010	5463	76	0.0020	3642	92	0.0036	2731	96	0.0050	2185	93	0.0060	1821	85	0.0067	1366	83	0.0086	

CPT: Chip per tooth  
 SFM: Surface feet per minute  
 IPM: Inches per minute  
 DOC: Depth cut  
 FPT: Feed per tooth

SFM = .262 x Dia. x RPM  
 RPM = 3.82 x SFM/DIA.  
 IPM = FPT x No. Teeth x RPM  
 FPT = IPM / (No. Teeth x RPM)

# SPEED & FEED GUIDE: 7 FLUTE



MATERIAL	AXIAL DOC ↓	RADIAL DOC →	SFM	DIAMETER																									
				1/8			1/4			3/8			1/2			5/8			3/4			1			1 1/4				
				RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT	RPM	IPM	CPT		
<b>Carbon Steel</b>	10XX, 11XX	50% Radial	1 x D	.5 x D	<b>220</b>	6723	24	0.0005	3362	24	0.0010	2241	28	0.0018	1681	30	0.0025	1345	28	0.0030	1121	26	0.0033	840	25	0.0043	672	26	0.0056
	12XX, 13XX	30% Radial	1.25 x D	.3 x D	<b>264</b>	8068	34	0.0006	4034	34	0.0012	2689	41	0.0022	2017	43	0.0030	1614	41	0.0036	1345	38	0.0040	1008	37	0.0052	807	38	0.0067
		10% Radial	1.5 x D	.1 x D	<b>343</b>	10488	59	0.0008	5244	59	0.0016	3496	70	0.0029	2622	74	0.0040	2098	71	0.0048	1748	65	0.0053	1311	63	0.0069	1049	66	0.0090
		5% Radial	2 x D	.05 x D	<b>378</b>	11537	81	0.0010	5769	81	0.0020	3846	97	0.0036	2884	102	0.0050	2307	98	0.0060	1923	90	0.0067	1442	87	0.0086	1154	91	0.0112
<b>Alloy Steel</b>	40XX, 41XX, 42XX	50% Radial	1 x D	.5 x D	<b>180</b>	5501	19	0.0005	2750	14	8E-04	1834	12	0.0009	1375	12	0.0013	1100	12	0.0015	917	11	0.0017	688	10	0.0022	550	11	0.0028
	44XX, 48XX, 86XX	30% Radial	1.25 x D	.3 x D	<b>225</b>	6876	29	0.0006	3438	22	9E-04	2292	17	0.0011	1719	18	0.0015	1375	17	0.0018	1146	16	0.0020	860	16	0.0026	688	16	0.0034
		10% Radial	1.5 x D	.1 x D	<b>270</b>	8251	46	0.0008	4126	35	0.001	2750	28	0.0014	2063	29	0.0020	1650	28	0.0024	1375	26	0.0027	1031	25	0.0035	825	26	0.0045
		5% Radial	2 x D	.05 x D	<b>297</b>	9076	64	0.0010	4538	64	0.0020	3025	76	0.0036	2269	80	0.0050	1815	77	0.0060	1513	70	0.0067	1135	69	0.0086	908	71	0.0112
<b>Tool Steel</b>	A2, A3, D2, H11, H13	50% Radial	1 x D	.5 x D	<b>180</b>	5501	19	0.0005	2750	19	0.0010	1834	23	0.0018	1375	24	0.0025	1100	23	0.0030	917	21	0.0033	688	21	0.0043	550	22	0.0056
	M1, O-1, S-7, NAK 55	30% Radial	1.25 x D	.3 x D	<b>225</b>	6876	29	0.0006	3438	29	0.0012	2292	35	0.0022	1719	36	0.0030	1375	35	0.0036	1146	32	0.0040	860	31	0.0052	688	32	0.0067
		10% Radial	1.5 x D	.1 x D	<b>270</b>	8251	46	0.0008	4126	46	0.0016	2750	55	0.0029	2063	58	0.0040	1650	56	0.0048	1375	51	0.0053	1031	50	0.0069	825	52	0.0090
		5% Radial	2 x D	.05 x D	<b>297</b>	9076	64	0.0010	4538	64	0.0020	3025	76	0.0036	2269	80	0.0050	1815	77	0.0060	1513	70	0.0067	1135	69	0.0086	908	71	0.0112
<b>Cast Iron-Gray</b>	A2, A3, D2, H11, H13	50% Radial	1 x D	.5 x D	<b>100</b>	3056	11	0.0005	1528	11	0.0010	1019	13	0.0018	764	13	0.0025	611	13	0.0030	509	12	0.0033	382	12	0.0043	306	12	0.0056
	M1, O-1, S-7, NAK 55	30% Radial	1.25 x D	.3 x D	<b>125</b>	3820	16	0.0006	1910	16	0.0012	1273	19	0.0022	955	20	0.0030	764	19	0.0036	637	18	0.0040	478	17	0.0052	382	18	0.0067
		10% Radial	1.5 x D	.1 x D	<b>163</b>	4966	28	0.0008	2483	28	0.0016	1655	33	0.0029	1242	35	0.0040	993	34	0.0048	828	31	0.0053	621	30	0.0069	497	31	0.0090
		5% Radial	2 x D	.05 x D	<b>179</b>	5463	38	0.0010	2731	38	0.0020	1821	46	0.0036	1366	48	0.0050	1093	46	0.0060	910	42	0.0067	683	41	0.0086	546	43	0.0112
<b>Cast Iron-Gray Malleable</b>	Ductile (Nodular)	50% Radial	.75 x D	.5 x D	<b>155</b>	4737	17	0.0005	2368	17	0.0010	1579	20	0.0018	1184	21	0.0025	947	20	0.0030	789	18	0.0033	592	18	0.0043	474	19	0.0056
	Malleable	30% Radial	1.25 x D	.3 x D	<b>180</b>	5501	23	0.0006	2750	23	0.0012	1834	28	0.0022	1375	29	0.0030	1100	28	0.0036	917	26	0.0040	688	25	0.0052	550	26	0.0067
	GGG-40, to GGG-70	10% Radial	1.5 x D	.1 x D	<b>216</b>	6601	37	0.0008	3300	37	0.0016	2200	44	0.0029	1650	47	0.0040	1320	45	0.0048	1100	41	0.0053	825	40	0.0069	660	42	0.0090
		5% Radial	2 x D	.05 x D	<b>238</b>	7261	51	0.0010	3631	51	0.0020	2420	61	0.0036	1815	64	0.0050	1452	61	0.0060	1210	56	0.0067	908	55	0.0086	726	57	0.0112
<b>SS 300 &amp; 400 Series</b>	303, 304, 316, 312	50% Radial	.75 x D	.5 x D	<b>140</b>	4278	15	0.0005	2139	15	0.0010	1426	18	0.0018	1070	19	0.0025	856	18	0.0030	713	17	0.0033	535	16	0.0043	428	17	0.0056
	420, 420F, 416, 440	30% Radial	1.25 x D	.3 x D	<b>185</b>	5654	24	0.0006	2827	24	0.0012	1885	28	0.0022	1413	30	0.0030	1131	29	0.0036	942	26	0.0040	707	26	0.0052	565	27	0.0067
		10% Radial	1.5 x D	.1 x D	<b>230</b>	7039	39	0.0008	3519	39	0.0016	2346	47	0.0029	1760	50	0.0040	1408	48	0.0048	1173	44	0.0053	880	43	0.0069	704	44	0.0090
		5% Radial	2 x D	.05 x D	<b>253</b>	7743	54	0.0010	3871	54	0.0020	2581	65	0.0036	1936	68	0.0050	1549	66	0.0060	1290	60	0.0067	968	59	0.0086	774	61	0.0112
<b>Precipitation SS</b>	15-5, 16-6, 17-4, 17-5	50% Radial	0.5 x D	.5 x D	<b>115</b>	3514	12	0.0005	1757	12	0.0010	1171	15	0.0018	879	15	0.0025	703	15	0.0030	586	14	0.0033	439	13	0.0043	351	14	0.0056
		30% Radial	1.25 x D	.3 x D	<b>180</b>	5501	23	0.0006	2750	23	0.0012	1834	28	0.0022	1375	29	0.0030	1100	28	0.0036	917	26	0.0040	688	25	0.0052	550	26	0.0067
		10% Radial	1.5 x D	.1 x D	<b>250</b>	7640	43	0.0008	3820	43	0.0016	2547	51	0.0029	1910	54	0.0040	1528	52	0.0048	1273	47	0.0053	955	46	0.0069	764	48	0.0090
		5% Radial	2 x D	.05 x D	<b>275</b>	8404	59	0.0010	4202	59	0.0020	2801	71	0.0036	2101	74	0.0050	1681	71	0.0060	1401	65	0.0067	1051	64	0.0086	840	66	0.0112
<b>High Temp Alloys</b>	Inconel 625, 718, Rene	40% Radial	0.5 x D	.4 x D	<b>70</b>	2139	7	0.0005	1070	7	0.0010	713	9	0.0018	535	9	0.0025	428	9	0.0030	357	8	0.0033	267	8	0.0043	214	8	0.0056
	Hastalloy, Haynes, A286	20% Radial	1.25 x D	.2 x D	<b>80</b>	2445	10	0.0006	1222	10	0.0012	815	12	0.0022	611	13	0.0030	489	12	0.0036	407	11	0.0040	306	11	0.0052	244	12	0.0067
	Waspalloy, Cobalt Chrome	7% Radial	1.5 x D	.1 x D	<b>125</b>	3820	21	0.0008	1910	21	0.0016	1273	26	0.0029	955	27	0.0040	764	26	0.0048	637	24	0.0053	478	23	0.0069	382	24	0.0090
		5% Radial	2 x D	.05 x D	<b>138</b>	4202	29	0.0010	2101	29	0.0020	1401	35	0.0036	1051	37	0.0050	840	36	0.0060	700	33	0.0067	525	32	0.0086	420	33	0.0112
<b>Titanium [6AL4V]</b>	Grades (5-38)	50% Radial	1 x D	.5 x D	<b>180</b>	5501	19	0.0005	2750	19	0.0010	1834	23	0.0018	1375	24	0.0025	1100	23	0.0030	917	21	0.0033	688	21	0.0043	550	22	0.0056
		30% Radial	1.25 x D	.3 x D	<b>250</b>	7640	32	0.0006	3820	32	0.0012	2547	39	0.0022	1910	40	0.0030	1528	39	0.0036	1273	36	0.0040	955	35	0.0052	764	36	0.0067
		10% Radial	1.5 x D	.1 x D	<b>325</b>	9932	56	0.0008	4966	56	0.0016	3311	67	0.0029	2483	70	0.0040	1986	67	0.0048	1655	62	0.0053	1242	60	0.0069	993	63	0.0090
		5% Radial	2 x D	.05 x D	<b>400</b>	12224	86	0.0010	6112	86	0.0020	4075	103	0.0036	3056	108	0.0050	2445	104	0.0060	2037	95	0.0067	1528	93	0.0086	1222	96	0.0112

CPT: Chip per tooth  
 SFM: Surface feet per minute  
 IPM: Inches per minute  
 DOC: Depth cut  
 FPT: Feed per tooth

SFM = .262 x Dia. x RPM  
 RPM = 3.82 x SFM/DIA.  
 IPM = FPT x No. Teeth x RPM  
 FPT = IPM / (No. Teeth x RPM)

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