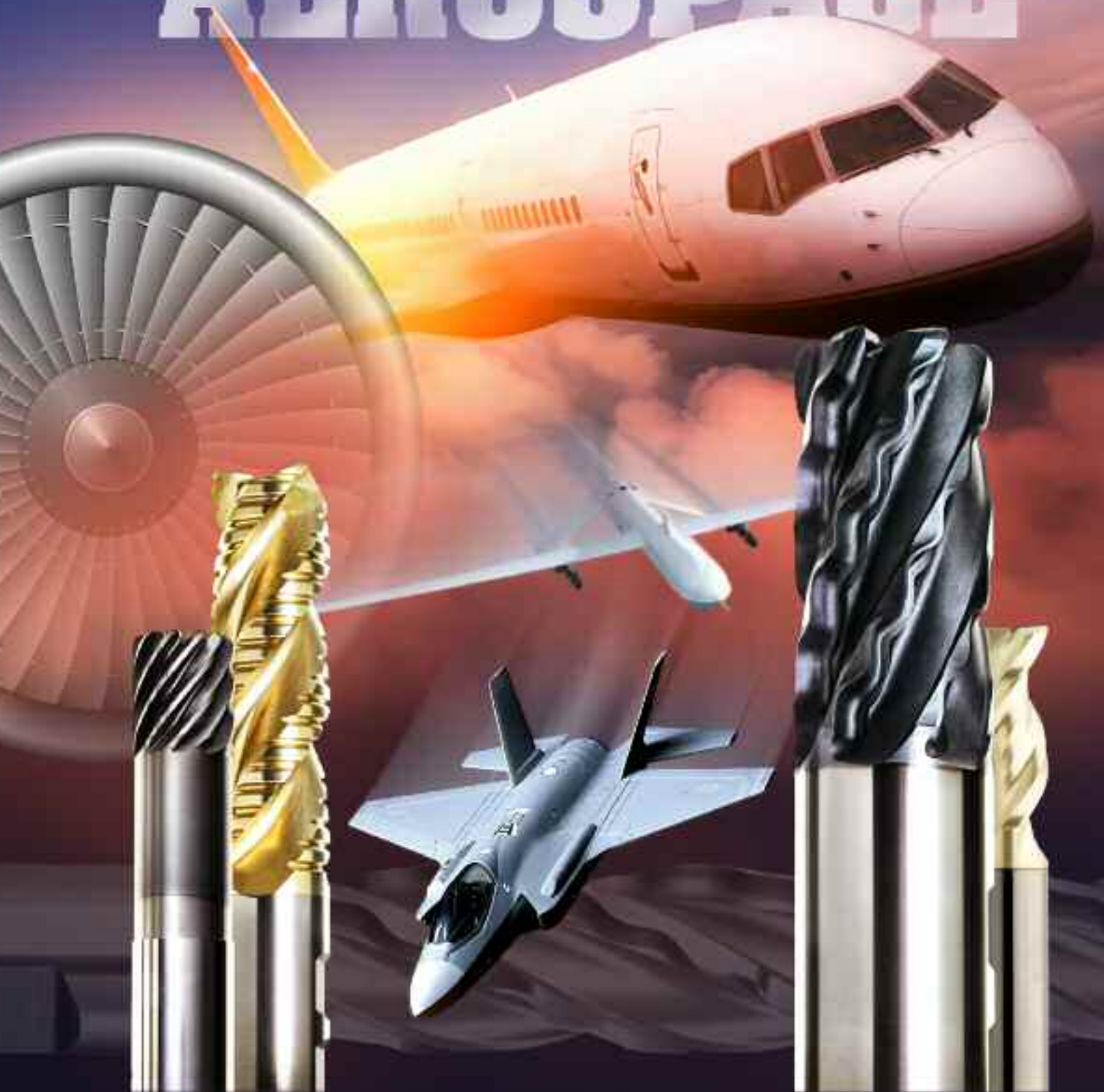


# AEROSPACE



 **BRUBAKER TOOL™**

 **DATA FLUTE™**

 **FASTCUT TOOL™**

 **WELDON®**

# History

*W*e have been providing top quality, American made cutting tools to industry for nearly 130 years. It all started in 1881 with Brubaker Tool supplying taps to the transport industry of the day; the railroads. Our tap offering grew and end mills, counterbores, countersinks and milling cutters entered into the picture. Over time our end users expanded to cover nearly every manufacturing based industry. As the aerospace industry developed in the United States, so did our product lines and our service to this growing sector. Brubaker Tool has been there since the early days. Later on, Weldon Tool and Fastcut entered the family, as did Data Flute in performance carbide. One constant remained however; our commitment to providing aerospace customers with the highest quality, highest performing, solid round cutting tools available.

Our companies are fortunate to have some of the longest standing and most respected brands serving the aerospace industry with quality cutting tools. Our product offering in solid, round cutting tools covers the entire gamut in terms of substrates, coatings, diameters and geometry. We are proud to offer timeless performers like the Weldon Crest-Kut and Brubaker Starchip rougher/finisher, as well as our newest generation of variably indexed, SSI-5 solid carbide tools from Data Flute. Prior to now, learning about our tools or finding the tool to fit your needs required having and reviewing three or four different catalogs. What we have done here is to present the tools across our brands and product lines that are most relevant to your needs in aerospace machining.



*A*erospace is an enormously important industry for us. Your needs are extensive in terms of tool quality, variety and performance. As a reflection of your importance to us, as well as the diversity of your cutting tool requirements, we have assembled the best and most relevant tools across all of our brands and placed them in one volume. Hopefully, this will ease your tool selection process as well as make you more familiar with the breadth and depth of our solid, round tool products.



Not only do we have what we believe to be some of the finest cutting tools for aerospace machining, we also have a highly qualified, field technical sales force. Our field technical representatives are available to assist you in tool selection, work with you at the spindle to assist in optimizing your machine productivity and where appropriate, work closely with you to develop special or custom tools specifically tailored to the machining challenge at hand. Our field technical sales force is also backed by factory technical support as well as our in-house R&D center. Our technical support reflects our belief that customer expertise in machining, combined with our cutting tool knowledge, will frequently present a better solution than either party could have developed in isolation.

The breadth of our product offering,

combined with decades of expertise in serving the aerospace industry, places us in a unique position in meeting your solid, round cutting tool needs. As always, if our standard offering does not meet your exact requirements, we stand ready to provide you with the finest quality special tools. We sincerely hope that you provide us the opportunity to demonstrate our capabilities and value.



# How the Catalog Is Organized

## By Work Material:

Aluminum and Non-Ferrous  
Titanium and Ferrous

## By Substrate:

M42 and CPM  
Solid Carbide

## Table of Contents

This section allows you to quickly reference the substrate or type of tool you are looking for. We have divided the catalog into two sections; Aluminum-Non Ferrous and Titanium-Ferrous.

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## Material Application Guide

We have tried to organize the tools in this catalog consistent with the manner in which our customers use them and think about them. The end mills have been categorized into one of two material machining areas: 1) Aluminum and Non-Ferrous Alloys; and 2) Titanium and Ferrous Alloys. Within these two major groupings tools are broken down into two major subgroups according to substrate, either M42/Powdered Metal or Carbide. Within each of the aforementioned listings, the tools are organized by operations beginning with Roughing and following a continuum through Finishing. While some are clearly intended as pure roughers or finishers, there are tools that cover the ground between serving as rougher-finishers or finisher-roughers. Use this guide to begin searching for a tool. First select the machined material group, next look for the appropriate tool substrate, and then select the tool series that best fits your application. The first page of each material/substrate group provides a brief description and page number for each tool series. As always, if you have any questions regarding tool selection or application, call the appropriate technical support line listed at the bottom of each page.

## COATINGS

All of our tools are available in a variety of application specific surface treatments and coatings. Please see individual tool listings for stocked treatments and coatings. Other treatments and coatings are available upon request. These surface treatments and coatings are designed to enhance performance as well as the life of the tool. The chart below is a handy reference outlining the surface treatment and coating composition as well as the suggested application. If the material you are preparing to machine is not listed, please give us a call and we can help.

	Code No.*	Composition	Characteristics	Application
	C-21 or 69	Amorphous Diamond Coating	Synthetic diamond. Low co-efficient of friction. Approximately three times harder than TiCN.	High abrasive applications, graphite, fiberglass, ceramics and composites.
	C-10 or 70	Aluminum Chromium Nitride (AlCrN)	Excellent coating that provides high oxidation resistance and high temperature wear resistance.	Very effective in wet/dry milling of steels, cast iron, aerospace inconel and titanium alloys.
	C-7 or 84	Titanium Aluminum Nitride (TiAlN)	A very hard coating recommended for harder alloys which has very good wear resistance, reduces friction and prevents galling.	Titanium, titanium alloys, nickel-base alloys, stainless steel and cast iron. Effective at higher speed. Not recommended for wrought aluminum, copper or brass.
	C-11 or 85	Aluminum Titanium Nitride (AlTiN)	An extremely hard coating very similar to TiAlN with outstanding wear resistance. AlTiN has a higher aluminum content which makes it harder and smoother than TiAlN.	Very effective in the same materials as TiAlN. Excellent for small depths of cut and excels in high speed and dry machining applications.
	C-5 or 86	Zirconium Nitride (ZrN)	A thin hard coating that improves lubricity and increases oxidation resistance. Specifically designed for machining abrasive and gummy materials.	Suitable for machining aluminum alloys, high silica aluminum, cast iron, high temperature alloys, stainless steel and glass filled plastics. Not recommended for machining carbon steels.
	C-1 or 88	Titanium Nitride (TiN)	A general purpose coating which has excellent wear resistance, reduces friction and prevents galling.	Most ferrous materials. Although it's unlikely, galling may occur in titanium and titanium alloys. (Not recommended for aluminum.)
	C-4 or 89	Titanium Carbo Nitride (TiCN)	An extremely hard coating which has outstanding wear resistance, reduces friction and prevents galling.	Most ferrous, non-ferrous and non-metallic materials. Very effective at higher speeds. Although it's unlikely galling may occur in titanium and titanium alloys.
	00	No Coating		

\*Certain tool series use different coating code numbers. Please see tool series detail for the appropriate coating code.

# Aluminum and Non-Ferrous Alloys

## Cobalt and Powdered Metal

	Description	Page 7
Truncated Rougher	Three Flute, 41 Degree Helix, Powdered Metal, Profile, Slot and Pocket	Page 8
Truncated Rougher Reduced Neck	Three Flute, 41 Degree Helix, Powdered Metal, Profile, Slot and Pocket, Reduced Neck	Page 10
Truncated Rougher/Finisher	Three Flute, 35 Degree Helix, Cobalt, Profile, Slot and Pocket	Page 12
Finisher	Three Flute, 35 Degree Helix, Cobalt, Profile, Slot and Pocket	Page 14

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## Performance Carbide

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ALDH	Three Flute, Double Helix Rougher's, Regular and Reduced Neck	Page 20
Tri-Power <sup>3</sup> ®	Three Flute, 45 Degree Helix, Rougher/Finisher	Page 22
HVM-2	Two Flute, 35 Degree Helix, Rougher/Finisher, Reduced Neck	Page 24
HVM-3	Three Flute, 35 Degree Helix, Rougher/Finisher, Reduced Neck	Page 26
HVMag	Two Flute, 35 Degree Helix, Reduced Neck, Ultra High Speed, Rougher/Finisher	Page 28
ARF	Two Flute, 48 Degree Helix, Rougher/Finisher	Page 30
ARF-BN	Two Flute, 48 Degree Helix, Finisher, Ball Nose	Page 32
HVM-BN	Two Flute, 35 Degree Helix, Finisher, Ball Nose	Page 34

## Cobalt and Powdered Metal

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Fine Pitch Rougher	Multi-Flute, 30 Degree Helix, Powdered Metal, Profile, Slot and Pocket	Page 38
Fine Pitch Rougher	Multi-Flute, 30 Degree Helix, Cobalt, Profile, Slot and Pocket	Page 40
Fine Pitch Rougher BN	Multi-Flute, 30 Degree Helix, Cobalt, Contour Milling, Ball Nose	Page 42
Crest-Kut <sup>2</sup> ™	Multi-Flute, 37 Degree Helix, Cobalt, Ground Flutes	Page 44
Crest-Kut®	Multi-Flute, 30 Degree Helix, Cobalt, Milled Flutes	Page 46
Crest-Kut® Reduced Neck	Multi-Flute, 30 Degree Helix, Cobalt, Profile, Slot and Pocket, Reduced Neck	Page 48
Ti35	Multi-Flute, 35 Degree Helix, Cobalt, Rougher/Finisher	Page 50
Ni30	Multi-Flute, 30 Degree Helix, Cobalt, Rougher/Finisher for Nickel Based Alloys	Page 52
WM Series	Multi-Flute, 45 Degree Helix, Powdered Metal, Finisher	Page 54
TiF35	Multi-Flute, 35 Degree Helix, Cobalt, Finisher, Right Hand	Page 56
TiF35 LH	Multi-Flute, 35 Degree Helix, Cobalt, Finisher, Left Hand	Page 58
NiF30	Multi-Flute, 30 Degree Helix, Cobalt, Finisher for Nickel Based Alloys	Page 60

## Performance Carbide

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SSI-4	Four-Flute, Variably Indexed, Roughing/Finishing, Profile Slot and Pocket	Page 64
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SSI-4 BN	Four-Flute, Ball Nose, Variably Indexed, Contour Milling	Page 72
SSI-5	Five-Flute, Variably Indexed, Roughing/Finishing, Profile Slot and Pocket	Page 74
SSI-5 Reduced Neck	Five-Flute, Variably Indexed, Roughing/Finishing, Reduced Neck	Page 80
MH	Multi-Flute, Finishing, Light Profile Cuts	Page 82
TiM	Multi-Flute, Finishing, Profile Cuts, Extend Reach	Page 88

# End Mills

## Aluminum and Non-Ferrous

First quality M42 and powdered  
metal tools designed specifically  
for machining aluminum and  
non-ferrous alloys.





# Aluminum

## and Non-Ferrous Alloys

### Cobalt and Powdered Metal



SERIES	DESCRIPTION	PAGE
Truncated Rougher	Three Flute, 41 Degree Helix, Powdered Metal, Profile, Slot and Pocket	8
Truncated Rougher Reduced Neck	Three Flute, 41 Degree Helix, Powdered Metal, Profile, Slot and Pocket, Reduced Neck	10
Truncated Rougher/ Finisher	Three Flute, 35 Degree Helix, Cobalt, Profile, Slot and Pocket	12
Finisher	Three Flute, 35 Degree Helix, Cobalt, Profile, Slot and Pocket	14



These tools have been designed for aggressive metal removal in aluminum and non-ferrous alloys, while providing better finish than traditional roughers. The truncated serrations assist in breaking up chips and chip removal. The powdered metal substrate combines the toughness of M42 along with wear characteristics approaching carbide. All tools are supplied as center cutting.

## Powdered Metal Speeds and Feeds Chart for Non-Ferrous Materials

Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red Leaded Brass
	PM SFM	700 - Plus	300 - 600	400 - 700	450 - 800	450 - 900
1/2"	S	0.0060	0.0055	0.0050	0.0050	0.0050
	HP	0.0060	0.0060	0.0050	0.0050	0.0050
	LP	0.0080	0.0080	0.0070	0.0070	0.0070
5/8"	S	0.0065	0.0059	0.0054	0.0054	0.0054
	HP	0.0070	0.0070	0.0059	0.0059	0.0059
	LP	0.0095	0.0095	0.0085	0.0085	0.0085
3/4"	S	0.0068	0.0062	0.0057	0.0057	0.0057
	HP	0.0077	0.0077	0.0064	0.0064	0.0064
	LP	0.0103	0.0103	0.0090	0.0090	0.0090
1"	S	0.0108	0.0099	0.0090	0.0090	0.0090
	HP	0.0114	0.0114	0.0095	0.0095	0.0095
	LP	0.0152	0.0152	0.0133	0.0133	0.0133
1-1/4"	S	0.0115	0.0106	0.0096	0.0096	0.0096
	HP	0.0122	0.0122	0.0102	0.0102	0.0102
	LP	0.0162	0.0162	0.0142	0.0142	0.0142
1-1/2"	S	0.0194	0.0178	0.0162	0.0162	0.0162
	HP	0.0217	0.0217	0.0181	0.0181	0.0181
	LP	0.0289	0.0289	0.0253	0.0253	0.0253
2"	S	0.0220	0.0202	0.0184	0.0184	0.0184
	HP	0.0278	0.0278	0.0231	0.0231	0.0231
	LP	0.0370	0.0370	0.0324	0.0324	0.0324

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter  
High Coolant Pressure

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.5 x Diameter  
Radial width .5 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
2.0 x Diameter  
Radial width .2 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** Horsepower will be the limiting factor with larger diameter end mills. Using coated end mills will improve tool life.

For additional support and for maximum optimization of your tools, call us toll free at: Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.

# 3 Flute Truncated Rougher

# Powdered Metal

- Powdered Metal Substrate
- 41 Degree Helix
- Cutting Diameter Tolerance +.003/- .000
- Permits Heavy Cuts at Elevated Speeds and Feeds
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	OAL	EDP	TiCN EDP	ZrN EDP
1/2	1/2	1-1/4	3-1/4	77800-00	77800-89	77800-86
1/2	1/2	2	4	77833-00	77833-89	77833-86
5/8	5/8	1-5/8	3-3/4	77803-00	77803-89	77803-86
5/8	5/8	2-1/2	4-5/8	77836-00	77836-89	77836-86
3/4	3/4	1-5/8	3-7/8	77806-00	77806-89	77806-86
3/4	3/4	2-1/4	4-1/2	77818-00	77818-89	77818-86
3/4	3/4	3	5-1/4	77839-00	77839-89	77839-86
1	1	1-1/4	3-3/4	77866-00	77866-89	77866-86
1	1	2	4-1/2	77809-00	77809-89	77809-86
1	1	3	5-1/2	77821-00	77821-89	77821-86
1	1	4	6-1/2	77842-00	77842-89	77842-86
1-1/4	1-1/4	2	4-1/2	77812-00	77812-89	77812-86
1-1/4	1-1/4	3	5-1/2	77824-00	77824-89	77824-86
1-1/4	1-1/4	4	6-1/2	77845-00	77845-89	77845-86
1-1/4	1-1/4	6	8-1/2	77857-00	77857-89	77857-86
1-1/2	1-1/4	2	4-1/2	77815-00	77815-89	77815-86
1-1/2	1-1/4	3	5-1/2	77827-00	77827-89	77827-86
1-1/2	1-1/4	4	6-1/2	77848-00	77848-89	77848-86
1-1/2	1-1/4	6	8-1/2	77860-00	77860-89	77860-86
2	2	2	5-3/4	77863-00	77863-89	77863-86
2	2	3	6-3/4	77830-00	77830-89	77830-86
2	2	4	7-3/4	77851-00	77851-89	77851-86
2	2	6	9-3/4	77854-00	77854-89	77854-86

To order Brubaker brand tools, please take base part number and add a “-B” at the end of the number.

**Example**      **Brubaker Brand Tool**  
77800-00      77800-00-B

To order Fastcut brand tools, please take base part number and add a “-F” at the end of the number.

**Example**      **Fastcut Brand Tool**  
77800-00      77800-00-F



These tools have all of the design and performance features of our standard shank Truncated Roughers. The reduced neck allows for deep reach milling while minimizing tool deflection and unwanted chatter. All tools are supplied as center cutting.

## Powdered Metal Speeds and Feeds Chart for Non-Ferrous Materials

Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red Leaded Brass
	PM SFM	700 - Plus	300 - 600	400 - 700	450 - 800	450 - 900
3/4"	S	0.0068	0.0062	0.0057	0.0057	0.0057
	HP	0.0077	0.0077	0.0064	0.0064	0.0064
	LP	0.0103	0.0103	0.0090	0.0090	0.0090
1"	S	0.0108	0.0099	0.0090	0.0090	0.0090
	HP	0.0114	0.0114	0.0095	0.0095	0.0095
	LP	0.0152	0.0152	0.0133	0.0133	0.0133
1-1/4"	S	0.0115	0.0106	0.0096	0.0096	0.0096
	HP	0.0122	0.0122	0.0102	0.0102	0.0102
	LP	0.0162	0.0162	0.0142	0.0142	0.0142
1-1/2"	S	0.0194	0.0178	0.0162	0.0162	0.0162
	HP	0.0217	0.0217	0.0181	0.0181	0.0181
	LP	0.0289	0.0289	0.0253	0.0253	0.0253
2"	S	0.0220	0.0202	0.0184	0.0184	0.0184
	HP	0.0278	0.0278	0.0231	0.0231	0.0231
	LP	0.0370	0.0370	0.0324	0.0324	0.0324

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter  
High Coolant Pressure

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.5 x Diameter  
Radial width .5 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
2.0 x Diameter  
Radial width .2 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** Horsepower will be the limiting factor with larger diameter end mills. Using coated end mills will improve tool life.

For additional support and for maximum optimization of your tools, call us toll free at: Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.

# 3 Flute Truncated Rougher W/Reduced Neck Powdered Metal

- Powdered Metal Substrate
- 41 Degree Helix
- Cutting Diameter Tolerance +.003/-.000
- Necked Portion for Extended Reach
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	LBS*	OAL	EDP	TiCN EDP	ZrN EDP
3/4	3/4	1	2-1/4	4-1/2	77920-00	77920-89	77920-86
3/4	3/4	1	3-3/8	5-5/8	77923-00	77923-89	77923-86
3/4	3/4	1	4-1/8	6-3/8	77926-00	77926-89	77926-86
1	1	1-1/2	2-5/8	5-1/8	77929-00	77929-89	77929-86
1	1	1-1/2	3-3/8	5-7/8	77932-00	77932-89	77932-86
1	1	1-1/2	4-1/8	6-5/8	77935-00	77935-89	77935-86
1-1/4	1-1/4	1-1/2	3	5-1/2	77938-00	77938-89	77938-86
1-1/4	1-1/4	1-1/2	4	6-1/2	77941-00	77941-89	77941-86
1-1/4	1-1/4	1-1/2	5	7-1/2	77944-00	77944-89	77944-86
1-1/4	1-1/4	1-1/2	6	8-1/2	77947-00	77947-89	77947-86
1-1/2	1-1/4	2	3-1/8	5-5/8	77950-00	77950-89	77950-86
1-1/2	1-1/4	2	4-1/8	6-5/8	77953-00	77953-89	77953-86
1-1/2	1-1/4	2	5-1/8	7-5/8	77956-00	77956-89	77956-86
1-1/2	1-1/4	2	6-1/8	8-5/8	77959-00	77959-89	77959-86
2	2	2-1/4	4-1/8	7-7/8	77962-00	77962-89	77962-86
2	2	2-1/4	5-1/8	8-7/8	77965-00	77965-89	77965-86
2	2	2-1/4	6-1/8	9-7/8	77968-00	77968-89	77968-86

\*LBS: Length Below Shank

To order Brubaker brand tools, please take base part number and add a "-B" at the end of the number.

**Example**      **Brubaker Brand Tool**  
77800-00      77800-00-B

To order Fastcut brand tools, please take base part number and add a "-F" at the end of the number.

**Example**      **Fastcut Brand Tool**  
77800-00      77800-00-F



This truncated design combines high metal removal rates while providing a much smoother finish than a conventional rougher. Center cutting geometry allows the operator to plunge, ramp, pocket, slot and profile.

## Cobalt Speeds and Feeds Chart for Non-Ferrous Materials

Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red Leaded Brass
Cobalt SFM		600 - 800	200 - 400	250 - 500	300 - 600	300 - 600
1/2"	S	0.0060	0.0055	0.0050	0.0050	0.0050
	HP	0.0060	0.0060	0.0050	0.0050	0.0050
	LP	0.0080	0.0080	0.0070	0.0070	0.0070
3/4"	S	0.0068	0.0062	0.0057	0.0057	0.0057
	HP	0.0077	0.0077	0.0064	0.0064	0.0064
	LP	0.0103	0.0103	0.0090	0.0090	0.0090
1"	S	0.0108	0.0099	0.0090	0.0090	0.0090
	HP	0.0114	0.0114	0.0095	0.0095	0.0095
	LP	0.0152	0.0152	0.0133	0.0133	0.0133
1-1/4"	S	0.0115	0.0106	0.0096	0.0096	0.0096
	HP	0.0122	0.0122	0.0102	0.0102	0.0102
	LP	0.0162	0.0162	0.0142	0.0142	0.0142
1-1/2"	S	0.0194	0.0178	0.0162	0.0162	0.0162
	HP	0.0217	0.0217	0.0181	0.0181	0.0181
	LP	0.0289	0.0289	0.0253	0.0253	0.0253
2"	S	0.0220	0.0202	0.0184	0.0184	0.0184
	HP	0.0278	0.0278	0.0231	0.0231	0.0231
	LP	0.0370	0.0370	0.0324	0.0324	0.0324

**S = SLOTTING**  
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Axial Depth up to  
1.5 x Diameter  
Radial width .5 x Diameter

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Axial Depth up to  
2.0 x Diameter  
Radial width .2 x Diameter

**CALCULATIONS FOR SPEED**  
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**Note!** Horsepower will be the limiting factor with larger diameter end mills. Using coated end mills will improve tool life.

For additional support and for maximum optimization of your tools, call us toll free at:  
Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.



# 3 Flute Truncated Rougher/Finisher

**Cobalt**

- M42 Cobalt
- 35 Degree Helix
- Center Cutting Geometry
- Cutting Diameter Tolerance +.003/- .000
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	OAL	EDP	TICN EDP	ZrN EDP
1/2	1/2	1-1/4	3-1/4	77600-00	77600-89	77600-86
1/2	1/2	2	4	77618-00	77618-89	77618-86
1/2	1/2	3	5	77636-00	77636-89	77636-86
3/4	3/4	1-5/8	3-7/8	77603-00	77603-89	77603-86
3/4	3/4	3	5-1/4	77621-00	77621-89	77621-86
3/4	3/4	4	6-1/4	77639-00	77639-89	77639-86
1	1	2	4-1/2	77606-00	77606-89	77606-86
1	1	3	5-1/2	77624-00	77624-89	77624-86
1	1	4	6-1/2	77642-00	77642-89	77642-86
1	1	6	8-1/2	77654-00	77654-89	77654-86
1-1/4	1-1/4	2	4-1/2	77609-00	77609-89	77609-86
1-1/4	1-1/4	3	5-1/2	77627-00	77627-89	77627-86
1-1/4	1-1/4	4	6-1/2	77645-00	77645-89	77645-86
1-1/4	1-1/4	6	8-1/2	77657-00	77657-89	77657-86
1-1/2	1-1/4	2	4-1/2	77612-00	77612-89	77612-86
1-1/2	1-1/4	3	5-1/2	77630-00	77630-89	77630-86
1-1/2	1-1/4	4	6-1/2	77648-00	77648-89	77648-86
1-1/2	1-1/4	6	8-1/2	77660-00	77660-89	77660-86
2	2	2	5-3/4	77615-00	77615-89	77615-86
2	2	3	6-3/4	77633-00	77633-89	77633-86
2	2	4	7-3/4	77651-00	77651-89	77651-86
2	2	6	9-3/4	77663-00	77663-89	77663-86

To order Brubaker brand tools, please take base part number and add a “-B” at the end of the number.

**Example**      **Brubaker Brand Tool**  
77800-00      77800-00-B

To order Fastcut brand tools, please take base part number and add a “-F” at the end of the number.

**Example**      **Fastcut Brand Tool**  
77800-00      77800-00-F



These three flute, M42 tools are manufactured with a 35 degree helix and radial relief on the OD. The result is an exceptionally strong cutting edge as well as superior finish on aluminum and non-ferrous materials. All tools are supplied as center cutting.

## Cobalt Speeds and Feeds Chart for Non-Ferrous Materials

Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red Leaded Brass
Cobalt SFM		600 - 800	200 - 400	250 - 500	300 - 600	300 - 600
1/2"	S	0.0060	0.0055	0.0050	0.0050	0.0050
	HP	0.0060	0.0060	0.0050	0.0050	0.0050
	LP	0.0080	0.0080	0.0070	0.0070	0.0070
3/4"	S	0.0068	0.0062	0.0057	0.0057	0.0057
	HP	0.0077	0.0077	0.0064	0.0064	0.0064
	LP	0.0103	0.0103	0.0090	0.0090	0.0090
1"	S	0.0108	0.0099	0.0090	0.0090	0.0090
	HP	0.0114	0.0114	0.0095	0.0095	0.0095
	LP	0.0152	0.0152	0.0133	0.0133	0.0133
1-1/4"	S	0.0115	0.0106	0.0096	0.0096	0.0096
	HP	0.0122	0.0122	0.0102	0.0102	0.0102
	LP	0.0162	0.0162	0.0142	0.0142	0.0142
1-1/2"	S	0.0194	0.0178	0.0162	0.0162	0.0162
	HP	0.0217	0.0217	0.0181	0.0181	0.0181
	LP	0.0289	0.0289	0.0253	0.0253	0.0253
2"	S	0.0220	0.0202	0.0184	0.0184	0.0184
	HP	0.0278	0.0278	0.0231	0.0231	0.0231
	LP	0.0370	0.0370	0.0324	0.0324	0.0324

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter  
High Coolant Pressure

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.5 x Diameter  
Radial width .5 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
2.0 x Diameter  
Radial width .2 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** Horsepower will be the limiting factor with larger diameter end mills. Using coated end mills will improve tool life.

For additional support and for maximum optimization of your tools, call us toll free at:  
Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.





# 3 Flute Finishing End Mills

**Cobalt**

- M42 Cobalt
- 35 Degree Helix
- Cylindrical Margin
- Cutting Diameter Tolerance +.003/- .000
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	OAL	EDP	TiCN EDP	ZrN EDP
1/2	1/2	1-1/4	3-1/4	77700-00	77700-89	77700-86
1/2	1/2	2	4	77718-00	77718-89	77718-86
1/2	1/2	3	5	77736-00	77736-89	77736-86
3/4	3/4	1-5/8	3-7/8	77703-00	77703-89	77703-86
3/4	3/4	3	5-1/4	77721-00	77721-89	77721-86
3/4	3/4	4	6-1/4	77739-00	77739-89	77739-86
1	1	2	4-1/2	77706-00	77706-89	77706-86
1	1	3	5-1/2	77724-00	77724-89	77724-86
1	1	4	6-1/2	77742-00	77742-89	77742-86
1	1	6	8-1/2	77754-00	77754-89	77754-86
1-1/4	1-1/4	2	4-1/2	77709-00	77709-89	77709-86
1-1/4	1-1/4	3	5-1/2	77727-00	77727-89	77727-86
1-1/4	1-1/4	4	6-1/2	77745-00	77745-89	77745-86
1-1/4	1-1/4	6	8-1/2	77757-00	77757-89	77757-86
1-1/2	1-1/4	2	4-1/2	77712-00	77712-89	77712-86
1-1/2	1-1/4	3	5-1/2	77730-00	77730-89	77730-86
1-1/2	1-1/4	4	6-1/2	77748-00	77748-89	77748-86
1-1/2	1-1/4	6	8-1/2	77760-00	77760-89	77760-86
2	2	2	5-3/4	77715-00	77715-89	77715-86
2	2	3	6-3/4	77733-00	77733-89	77733-86
2	2	4	7-3/4	77751-00	77751-89	77751-86
2	2	6	9-3/4	77763-00	77763-89	77763-86

To order Brubaker brand tools, please take base part number and add a “-B” at the end of the number.

**Example**      **Brubaker Brand Tool**  
77800-00      77800-00-B

To order Fastcut brand tools, please take base part number and add a “-F” at the end of the number.

**Example**      **Fastcut Brand Tool**  
77800-00      77800-00-F

# End Mills

## Aluminum and Non-Ferrous

Highest quality, sub-micron grain,  
solid carbide tools for your  
aluminum and non-ferrous alloy  
aerospace machining.



# Aluminum

## and Non-Ferrous Alloys

### Performance Carbide



SERIES	DESCRIPTION	PAGE
ALDH-C	Three Flute, Double Helix, Roughers, Regular and Reduced Neck with Chip Breakers	18
ALDH	Three Flute, Double Helix Roughers, Regular and Reduced Neck	20
Tri-Power <sup>3®</sup>	Three Flute, 45 Degree Helix, Rougher/Finisher	22
HVM-2	Two Flute, 35 Degree Helix, Rougher/Finisher, Reduced Neck	24
HVM-3	Three Flute, 35 Degree Helix, Rougher/Finisher, Reduced Neck	26
HVMag	Two Flute, 35 Degree Helix, Reduced Neck, Ultra High Speed, Rougher/Finisher	28
ARF	Two Flute, 48 Degree Helix, Rougher/Finisher	30
ARF-BN	Two Flute, 48 Degree Helix, Finisher, Ball Nose	32
HVM-BN	Two Flute, 35 Degree Helix, Finisher, Ball Nose	34



The ALDH-C is designed for very aggressive roughing in aluminum and non-ferrous materials. The chip breaker geometry allows for ease of chip evacuation and reduces cutting forces. These tools perform best when used with high performance milling chucks, or shrink-fit holders.

## Carbide Speeds and Feeds Chart for Non-Ferrous Materials

ALDH-C Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter  
Radial width .5 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.5 – 2.0 x Diameter  
Radial width .3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
Effective Length of Cut  
Radial width .02 x Diameter

**Note!** Horsepower will be the limiting factor with larger diameter end mills.

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.

- Premium Carbide
- Double Helix
- Cutting Diameter Tolerance  $\pm .000/- .0015$
- Truncated Geometry

- Available Upon Request:
  - Radius Ends
  - Coolant Groves
  - Additional Coating

Part Number	Diameter	Shank	LOC	OAL	LBS*	Radius	EDP	TiCN EDP	ZrN EDP
ALDH-ST-C-30250	1/4	1/4	3/8	2			54301-00-D	54301-89-D	54301-86-D
ALDH-C-30250	1/4	1/4	1/2	2-1/2			54302-00-D	54302-89-D	54302-86-D
ALDH-M-C-30250	1/4	1/4	3/4	3			54303-00-D	54303-89-D	54303-86-D
ALDH-RN-ST-C-30250	1/4	1/4	3/8	2-1/2	3/4		54304-00-D	54304-89-D	54304-86-D
ALDH-RN-M-C-30250	1/4	1/4	3/8	3	1-1/8		54306-00-D	54306-89-D	54306-86-D
ALDH-ST-C-30375	3/8	3/8	1/2	2			50631-00-D	50631-89-D	50631-86-D
ALDH-C-30375	3/8	3/8	3/4	2-1/2			50647-00-D	50647-89-D	50647-86-D
ALDH-M-C-30375	3/8	3/8	1	3			54307-00-D	54307-89-D	54307-86-D
ALDH-RN-C-30375	3/8	3/8	1/2	2-1/2	1-1/8		50663-00-D	50663-89-D	50663-86-D
ALDH-RN-C-30375-020	3/8	3/8	1/2	2-1/2	1-1/8	.020	50678-00-D	50678-89-D	50678-86-D
ALDH-RN-M-C-30375	3/8	3/8	1/2	3-1/2	2-1/8		54308-00-D	54308-89-D	54308-86-D
ALDH-ST-C-30500	1/2	1/2	5/8	2-1/2			50634-00-D	50634-89-D	50634-86-D
ALDH-STL-C-30500	1/2	1/2	1	3			54309-00-D	54309-89-D	54309-86-D
ALDH-C-30500	1/2	1/2	1-1/4	3			50651-00-D	50651-89-D	50651-86-D
ALDH-RN-C-30500	1/2	1/2	5/8	3	1-3/8		50666-00-D	50666-89-D	50666-86-D
ALDH-RN-C-30500-030	1/2	1/2	5/8	3	1-3/8	.030	50681-00-D	50681-89-D	50681-86-D
ALDH-RN-M-C-30500	1/2	1/2	5/8	4	2-1/8		54310-00-D	54310-89-D	54310-86-D
ALDH-RN-L-C-30500	1/2	1/2	5/8	6	3-3/8		54311-00-D	54311-89-D	54311-86-D
ALDH-ST-C-30625	5/8	5/8	3/4	3			50637-00-D	50637-89-D	50637-86-D
ALDH-STL-C-30625	5/8	5/8	1-1/4	4			54312-00-D	54312-89-D	54312-86-D
ALDH-C-30625	5/8	5/8	1-5/8	4			50654-00-D	50654-89-D	50654-86-D
ALDH-RN-C-30625	5/8	5/8	3/4	4	1-5/8		50669-00-D	50669-89-D	50669-86-D
ALDH-RN-C-30625-030	5/8	5/8	3/4	4	1-5/8	.030	50684-00-D	50684-89-D	50684-86-D
ALDH-RN-M-C-30625	5/8	5/8	3/4	5	2-3/8		54313-00-D	54313-89-D	54313-86-D
ALDH-RN-L-C-30625	5/8	5/8	3/4	6	3-3/8		54314-00-D	54314-89-D	54314-86-D
ALDH-ST-C-30750	3/4	3/4	1	3			50641-00-D	50641-89-D	50641-86-D
ALDH-C-30750	3/4	3/4	1-5/8	4			50657-00-D	50657-89-D	50657-86-D
ALDH-M-C-30750	3/4	3/4	2-1/4	5			54315-00-D	54315-89-D	54315-86-D
ALDH-RN-C-30750	3/4	3/4	1	4	2		50672-00-D	50672-89-D	50672-86-D
ALDH-RN-C-30750-030	3/4	3/4	1	4	2	.030	50688-00-D	50688-89-D	50688-86-D
ALDH-RN-M-C-30750	3/4	3/4	1	5	2-1/2		54317-00-D	54317-89-D	54317-86-D
ALDH-RN-L-C-30750	3/4	3/4	1	6	3-3/8		54318-00-D	54318-89-D	54318-86-D
ALDH-ST-C-31000	1	1	1-1/4	3			50644-00-D	50644-89-D	50644-86-D
ALDH-C-31000	1	1	1-3/4	4			50660-00-D	50660-89-D	50660-86-D
ALDH-M-C-31000	1	1	2-1/4	6			54319-00-D	54319-89-D	54319-86-D
ALDH-RN-C-31000	1	1	1-1/4	5	2		50675-00-D	50675-89-D	50675-86-D
ALDH-RN-C-31000-030	1	1	1-1/4	5	2	.030	50691-00-D	50691-89-D	50691-86-D
ALDH-RN-M-C-31000	1	1	1-1/4	5	2-5/8		54320-00-D	54320-89-D	54320-86-D
ALDH-RN-L-C-31000	1	1	1-1/4	6	3-3/8		54321-00-D	54321-89-D	54321-86-D
ALDH-RN-X-C-31000	1	1	1-1/4	7	4-3/8		54322-00-D	54322-89-D	54322-86-D

\*LBS: Length Below Shank



The ALDH is the 3 flute rougher of choice in most cases for optimizing metal removal rates. Our double helix geometry allows full engagement cuts at high feed rates. Feed rates of 50% higher than traditional two flute roughers provide a conservative starting point when calculating IPM.

## Carbide Speeds and Feeds Chart for Non-Ferrous Materials

ALDH Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter  
Radial width .5 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.5 – 2.0 x Diameter  
Radial width .3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
Effective Length of Cut  
Radial width .02 x Diameter

**Note!** Horsepower will be the limiting factor with larger diameter end mills.

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.

# ALDH Series

# Performance Carbide

- Premium Carbide
- Double Helix
- Cutting Diameter Tolerance +.000/- .0015
- Patented Geometry

- Available Upon Request:
  - Radius Ends
  - Coolant Groves
  - Additional Coatings

Part Number	Diameter	Shank	LOC	OAL	LBS*	Radius	EDP	TiCN EDP	ZrN EDP
ALDH-ST-30250	1/4	1/4	3/8	2			54280-00-D	54280-89-D	54280-86-D
ALDH-30250	1/4	1/4	1/2	2-1/2			54281-00-D	54281-89-D	54281-86-D
ALDH-M-30250	1/4	1/4	3/4	3			54282-00-D	54282-89-D	54282-86-D
ALDH-RN-ST-30250	1/4	1/4	3/8	2-1/2	3/4		54283-00-D	54283-89-D	54283-86-D
ALDH-RN-M-30250	1/4	1/4	3/8	3	1-1/8		54284-00-D	54284-89-D	54284-86-D
ALDH-ST-30375	3/8	3/8	1/2	2			50501-00-D	50501-89-D	50501-86-D
ALDH-30375	3/8	3/8	3/4	2-1/2			50529-00-D	50529-89-D	50529-86-D
ALDH-M-30750	3/8	3/8	1	3			54285-00-D	54285-89-D	54285-86-D
ADH-RN-30375	3/8	3/8	1/2	2-1/2	1-1/8		50575-00-D	50575-89-D	50575-86-D
AL ALDH-RN-30375-020	3/8	3/8	1/2	2-1/2	1-1/8	.020	50603-00-D	50603-89-D	50603-86-D
ALDH-RN-M-30750	3/8	3/8	1/2	3-1/2	2-1/8		54286-00-D	54286-89-D	54286-86-D
ALDH-ST-30500	1/2	1/2	5/8	2-1/2			50506-00-D	50506-89-D	50506-86-D
ALDH-STL-30500	1/2	1/2	1	3			54287-00-D	54287-89-D	54287-86-D
ALDH-30500	1/2	1/2	1-1/4	3			50536-00-D	50536-89-D	50536-86-D
ALDH-RN-30500	1/2	1/2	5/8	3	1-3/8		50582-00-D	50582-89-D	50582-86-D
ALDH-RN-30500-030	1/2	1/2	5/8	3	1-3/8	.030	50608-00-D	50608-89-D	50608-86-D
ALDH-RN-M-30500	1/2	1/2	5/8	4	2-1/8		54288-00-D	52488-89-D	54288-86-D
ALDH-RN-L-30500	1/2	1/2	5/8	6	3-3/8		54289-00-D	54289-89-D	54289-86-D
ALDH-ST-30625	5/8	5/8	3/4	3			50511-00-D	50511-89-D	50511-86-D
ALDH-STL-30625	5/8	5/8	1-1/4	4			54290-00-D	54290-89-D	54290-86-D
ALDH-30625	5/8	5/8	1-5/8	4			50544-00-D	50544-89-D	50544-86-D
ALDH-RN-30625	5/8	5/8	3/4	4	1-5/8		50587-00-D	50587-89-D	50587-86-D
ALDH-RN-30625-030	5/8	5/8	3/4	4	1-5/8	.030	50613-00-D	50613-89-D	50613-86-D
ALDH-RN-M-30625	5/8	5/8	3/4	5	2-3/8		54291-00-D	54291-89-D	54291-86-D
ALDH-RN-L-30625	5/8	5/8	3/4	6	3-3/8		54292-00-D	54292-89-D	54292-86-D
ALDH-ST-30750	3/4	3/4	1	3			50516-00-D	50516-89-D	50516-86-D
ALDH-30750	3/4	3/4	1-5/8	4			50552-00-D	50552-89-D	50552-86-D
ALDH-M-30750	3/4	3/4	2-1/4	5			54293-00-D	54293-89-D	54293-86-D
ALDH-RN-30750	3/4	3/4	1	4	2		50592-00-D	50592-89-D	50592-86-D
ALDH-RN-30750-030	3/4	3/4	1	4	2	.030	50618-00-D	50618-89-D	50618-86-D
ALDH-RN-M-30750	3/4	3/4	1	5	2-1/2		54294-00-D	54294-89-D	54294-86-D
ALDH-RN-L-30750	3/4	3/4	1	6	3-3/8		54295-00-D	54295-89-D	54295-86-D
ALDH-ST-31000	1	1	1-1/4	3			50523-00-D	50523-89-D	50523-86-D
ALDH-31000	1	1	1-3/4	4			50562-00-D	50562-89-D	50562-86-D
ALDH-M-31000	1	1	2-1/4	6			54297-00-D	54297-89-D	54297-86-D
ALDH-RN-31000	1	1	1-1/4	5	2		50597-00-D	50597-89-D	50597-86-D
ALDH-RN-31000-030	1	1	1-1/4	5	2	.030	50624-00-D	50624-89-D	50624-86-D
ALDH-RN-M-31000	1	1	1-1/4	5	2-5/8		54298-00-D	54298-89-D	54298-86-D
ALDH-RN-L-31000	1	1	1-1/4	6	3-3/8		54299-00-D	54299-89-D	54299-86-D
ALDH-RN-X-31000	1	1	1-1/4	7	4-3/8		54300-00-D	54300-89-D	54300-86-D

\*LBS: Length Below Shank



Our Tri-Power<sup>3</sup>® is a patented, three flute end mill for roughing and finishing in aluminum and non-ferrous materials. The high shear, 45 degree helix and patented flute form dramatically enhance chip evacuation under aggressive feed rates. The Tri-Power<sup>3</sup>® has beaten the competition in metal removal rates and cycle time reduction in test after test.

**Carbide Speeds and Feeds Chart for Non-Ferrous Materials**

Tri-Power <sup>3</sup> ® Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	HP	0.0032	0.0030	0.0026	0.0026	0.0026	0.0026
	LP	0.0041	0.0041	0.0036	0.0036	0.0036	0.0036
	FINISH	0.0049	0.0055	0.0045	0.0045	0.0045	0.0045
5/16"	HP	0.0038	0.0035	0.0030	0.0030	0.0030	0.0030
	LP	0.0048	0.0047	0.0041	0.0041	0.0041	0.0041
	FINISH	0.0059	0.0062	0.0056	0.0056	0.0056	0.0056
3/8"	HP	0.0048	0.0045	0.0039	0.0039	0.0039	0.0039
	LP	0.0061	0.0061	0.0055	0.0055	0.0055	0.0055
	FINISH	0.0074	0.0082	0.0068	0.0068	0.0068	0.0068
1/2"	HP	0.0075	0.0075	0.0065	0.0065	0.0065	0.0065
	LP	0.0095	0.0095	0.0085	0.0085	0.0085	0.0085
	FINISH	0.0115	0.0115	0.0095	0.0095	0.0095	0.0095
5/8"	HP	0.0080	0.0076	0.0066	0.0066	0.0066	0.0066
	LP	0.0102	0.0102	0.0091	0.0091	0.0091	0.0091
	FINISH	0.0123	0.0137	0.0113	0.0113	0.0113	0.0113
3/4"	HP	0.0085	0.0080	0.0070	0.0070	0.0070	0.0070
	LP	0.0115	0.0115	0.0103	0.0103	0.0103	0.0103
	FINISH	0.0140	0.0155	0.0128	0.0128	0.0128	0.0128
1"	HP	0.0135	0.0128	0.0111	0.0111	0.0111	0.0111
	LP	0.0171	0.0171	0.0153	0.0153	0.0153	0.0153
	FINISH	0.0207	0.0230	0.0190	0.0190	0.0190	0.0190

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
Effective Length of Cut  
Radial width .3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
Effective Length of Cut  
Radial width .01 x Diameter

**FINISH = FINISH OPERATION**  
Axial Depth up to  
Effective Length of Cut  
Radial width .02 x Diameter

**Note!** Horsepower will be the limiting factor with larger diameter end mills.

For additional support and for maximum optimization of your Weldon tools, call us toll free at 800.622.7742 and ask to speak to our Technical Support Department.



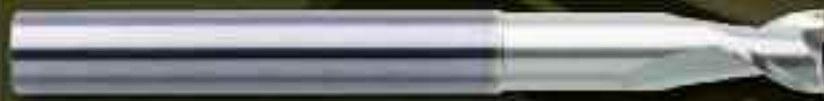


- 45 Degree Helix for Enhance Chip Evacuation
- Finishing/Rougher in Aluminum and Non Ferrous Metals
- Plain Cylindrical Shank
- Three Flutes Permit High Machine Productivity

- Available Upon Request:
  - Radius Ends
  - Coolant Groves
  - Additional Coatings

Part Number	Dia.	Shank	LOC	OAL	LBS*	Neck Dia.	EDP	ZrN EDP
WTP-ST-30250	1/4	1/4	3/8	2			57500-00-W	57500-86-W
WTP-30250	1/4	1/4	3/4	2-1/2			57501-00-W	57501-86-W
WTP-RN-30250	1/4	1/4	3/8	2-1/2	1-1/8	.235	57502-00-W	57502-86-W
WTP-RN-M-30250	1/4	1/4	3/8	4	2-1/8	.235	57503-00-W	57503-86-W
WTP-ST-30312	5/16	5/16	7/16	2-1/2			57504-00-W	57504-86-W
WTP-30312	5/16	5/16	13/16	2-1/2			57505-00-W	57505-86-W
WTP-RN-30312	5/16	5/16	7/16	2-1/2	1-1/8	.290	57506-00-W	57506-86-W
WTP-RN-M-30312	5/16	5/16	7/16	4	2-1/8	.290	57507-00-W	57507-86-W
WTP-ST-30375	3/8	3/8	1/2	2-1/2			57508-00-W	57508-86-W
WTP-30375	3/8	3/8	1	2-1/2			57509-00-W	57509-86-W
WTP-RN-30375	3/8	3/8	1/2	2-1/2	1-1/8	.355	57510-00-W	57510-86-W
WTP-RN-M-30375	3/8	3/8	1/2	4	2-1/8	.355	57511-00-W	57511-86-W
WTP-ST-30500	1/2	1/2	5/8	3			57512-00-W	57512-86-W
WTP-30500	1/2	1/2	1-1/4	3			57513-00-W	57513-86-W
WTP-RN-30500	1/2	1/2	5/8	3	1-3/8	.475	57514-00-W	57514-86-W
WTP-RN-M-30500	1/2	1/2	5/8	4	2-1/8	.475	57515-00-W	57515-86-W
WTP-ST-30625	5/8	5/8	3/4	3			57516-00-W	57516-86-W
WTP-30625	5/8	5/8	1-5/8	3-1/2			57517-00-W	57517-86-W
WTP-RN-30625	5/8	5/8	3/4	4	1-5/8	.590	57518-00-W	57518-86-W
WTP-RN-M-30625	5/8	5/8	3/4	6	2-3/8	.590	57519-00-W	57519-86-W
WTP-ST-30750	3/4	3/4	1	3			57521-00-W	57521-86-W
WTP-30750	3/4	3/4	1-5/8	4			57523-00-W	57523-86-W
WTP-RN-30750	3/4	3/4	1	4	2	.715	57525-00-W	57525-86-W
WTP-RN-M-30750	3/4	3/4	1	6	2-5/8	.715	57527-00-W	57527-86-W
WTP-ST-31000	1	1	1-1/4	4			57529-00-W	57529-86-W
WTP-31000	1	1	2	5			57531-00-W	57531-86-W
WTP-RN-31000	1	1	1-1/4	5	2-5/8	.960	57532-00-W	57532-86-W
WTP-RN-M-31000	1	1	1-1/4	7	3-5/8	.960	57533-00-W	57533-86-W

\*LBS: Length Below Shank



Our HVM-2 is a 2 flute rougher/finisher designed to be used at high RPM rates, high feed rates and shallower depths of cut. However, the tool is not limited to shallow cuts. The geometry is versatile enough to exploit the full spectrum of tradeoffs between depth of cut, feed rates and RPM to optimize the operation at hand.

## Carbide Speeds and Feeds Chart for Non-Ferrous Materials

HVM-2 Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter  
Radial width .5 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.5 – 2.0 x Diameter  
Radial width .3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
Effective Length of Cut  
Radial width .02 x Diameter

**Note!** Horsepower will be the limiting factor with larger diameter end mills.

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.

- Premium Carbide
- Periphery and Pocketing Operations
- Reduced Neck for Reach and Stability
- High and Low HP Applications

- Available Upon Request:
  - Radius Ends
  - Coolant Groves
  - Additional Coatings

Part Number	Diameter	Shank	LOC	LBS*	Neck Diameter	OAL	EDP	TiCN EDP	ZrN EDP
HVM-20250	1/4	1/4	3/8	1-1/8	0.235	2-1/2	51800-00-D	51800-89-D	51800-86-D
HVM-M-20250	1/4	1/4	3/8	2-1/8	0.235	4	51830-00-D	51830-89-D	51830-86-D
HVM-20375	3/8	3/8	1/2	1-1/8	0.355	2-1/2	51805-00-D	51805-89-D	51805-86-D
HVM-M-20375	3/8	3/8	1/2	2-1/8	0.355	4	51835-00-D	51835-89-D	51835-86-D
HVM-20500	1/2	1/2	5/8	1-3/8	0.475	3	51810-00-D	51810-89-D	51810-86-D
HVM-M-20500	1/2	1/2	5/8	2-1/8	0.475	4	51841-00-D	51841-89-D	51841-86-D
HVM-L-20500	1/2	1/2	5/8	3-3/8	0.475	6	51866-00-D	51866-89-D	51866-86-D
HVM-20625	5/8	5/8	3/4	1-5/8	0.590	4	51815-00-D	51815-89-D	51815-86-D
HVM-M-20625	5/8	5/8	3/4	2-3/8	0.590	6	51846-00-D	51846-89-D	51846-86-D
HVM-L-20625	5/8	5/8	3/4	3-3/8	0.590	6	51871-00-D	51871-89-D	51871-86-D
HVM-20750	3/4	3/4	1	2	0.715	4	51820-00-D	51820-89-D	51820-86-D
HVM-M-20750	3/4	3/4	1	2-1/2	0.715	6	51851-00-D	51851-89-D	51851-86-D
HVM-L-20750	3/4	3/4	1	3-3/8	0.715	6	51876-00-D	51876-89-D	51876-86-D
HVM-21000	1	1	1-1/4	2-5/8	0.960	5	51825-00-D	51825-89-D	51825-86-D
HVM-M-21000	1	1	1-1/4	3-3/8	0.960	7	51856-00-D	51856-89-D	51856-86-D
HVM-L-21000	1	1	1-1/4	4 3/8	0.960	7	51881-00-D	51881-89-D	51881-86-D

\*LBS: Length Below Shank



Our HVM-3 takes the HVM geometry into a 3 flute configuration. This tool can be used in roughing operations to improve metal removal rates over the two flute version, where additional machine HP is available. The third flute can also provide advantage when looking to rough and finish with one tool.

## Carbide Speeds and Feeds Chart for Non-Ferrous Materials

HVM-3 Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter  
Radial width .5 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.5 – 2.0 x Diameter  
Radial width .3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
Effective Length of Cut  
Radial width .02 x Diameter

**Note!** Horsepower will be the limiting factor with larger diameter end mills.

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.

- Premium Carbide
- 35 Degree Helix
- Rough and Finish
- Reduced Neck for Reach and Stability

- Available Upon Request:
  - Radius Ends
  - Coolant Groves
  - Additional Coatings

Part Number	Diameter	Shank	LOC	LBS*	Neck Diameter	OAL	EDP	TiCN EDP	ZrN EDP
HVM-30250	1/4	1/4	3/8	1-1/8	0.235	2-1/2	51886-00-D	51886-89-D	51886-86-D
HVM-M-30250	1/4	1/4	3/8	2-1/8	0.235	4	51916-00-D	51916-89-D	51916-86-D
HVM-30375	3/8	3/8	1/2	1-1/8	0.355	2-1/2	51891-00-D	51891-89-D	51891-86-D
HVM-M-30375	3/8	3/8	1/2	2-1/8	0.355	4	51921-00-D	51921-89-D	51921-86-D
HVM-30500	1/2	1/2	5/8	1-3/8	0.475	3	51896-00-D	51896-89-D	51896-86-D
HVM-M-30500	1/2	1/2	5/8	2-1/8	0.475	4	51926-00-D	51926-89-D	51926-86-D
HVM-L-30500	1/2	1/2	5/8	3-3/8	0.475	6	51946-00-D	51946-89-D	51946-86-D
HVM-30625	5/8	5/8	3/4	1-5/8	0.590	4	51901-00-D	51901-89-D	51901-86-D
HVM-M-30625	5/8	5/8	3/4	2-3/8	0.590	6	51931-00-D	51931-89-D	51931-86-D
HVM-L-30625	5/8	5/8	3/4	3-3/8	0.590	6	51951-00-D	51951-89-D	51951-86-D
HVM-30750	3/4	3/4	1	2	0.715	4	51906-00-D	51906-89-D	51906-86-D
HVM-M-30750	3/4	3/4	1	2-1/2	0.715	6	51936-00-D	51936-89-D	51936-86-D
HVM-L-30750	3/4	3/4	1	3-3/8	0.715	6	51956-00-D	51956-89-D	51956-86-D
HVM-31000	1	1	1-1/4	2-5/8	0.960	5	51911-00-D	51911-89-D	51911-86-D
HVM-M-31000	1	1	1-1/4	3-3/8	0.960	7	51941-00-D	51941-89-D	51941-86-D
HVM-L-31000	1	1	1-1/4	4-3/8	0.960	7	51961-00-D	51961-89-D	51961-86-D

\*LBS: Length Below Shank

## Introducing the HVMag

The intense competition in the marketplace and the need for ever higher rates of machining productivity has spawned a new generation of high powered, hyper-velocity machining centers. These new mega machines demand a tool that can deliver performance to match.

Data Flute has re-engineered our HVM (High Velocity Machining) series of tools to match the capabilities of the most productive machines on the market. We have done this based upon the proper combination of field testing, customer feedback and the most up-to-date analytic software available. Countless rounds of design, analysis, customer discussion, testing and re-testing have gone into this series of tools. The level of effort is consistent with the level of commitment that our valued customers have shown by investing in these next generation machining centers.

This catalog contains our standard offering in the HVMag series. We realize that there are frequently times when a more customized solution will provide better tool life, better productivity and better “fit” with a particular machining task. As always we welcome the opportunity to work with our customers to meet their machining and productivity needs with special or non-standard tooling. We also offer these tools with coolant through holes and other MQL modifications.

Data Flute believes that we have the finest hyper-velocity end mill on the market. We hope that you agree.





- Premium Sub-Micron Grain Carbide
- Extended Reach Design
- H6 Shank Tolerances
- Exceptional Balance

- Available Upon Request:
  - Radius Ends
  - Coolant Groves
  - Haimer Safe-Lock

Our HVMag is a 2 flute tool, with patented geometries designed specifically for the new generation of hyper-velocity machining centers. We have produced an exceptionally well balanced tool with superior chip flow for rotational speeds ranging from 15,000 rpm to 30,000+ rpm and feed rates of up to 1,000 inches per minute.

Part Number	Diameter	Shank	LOC	OAL	LBS*	EDP	EDP	EDP	EDP	EDP
						.000 Radius	.030 Radius	.060 Radius	.090 Radius	.120 Radius
HVMag-20375	3/8	3/8	1/2	3	1-1/4	52747-00-D	52748-00-D	52750-00-D	52751-00-D	
HVMag-L-20375	3/8	3/8	1/2	4	2-1/8	52752-00-D	52754-00-D	52756-00-D	52758-00-D	
HVMag-20500	1/2	1/2	5/8	3	1-1/2	52760-00-D	52762-00-D	52766-00-D	52768-00-D	52774-00-D
HVMag-M-20500	1/2	1/2	5/8	4	2-1/8	52775-00-D	52776-00-D	52777-00-D	52778-00-D	52779-00-D
HVMag-L-20500	1/2	1/2	5/8	6	3-1/4	52780-00-D	52781-00-D	52782-00-D	52783-00-D	52784-00-D
HVMag-20625	5/8	5/8	3/4	4	1-1/4	52785-00-D	52786-00-D	52787-00-D	52788-00-D	52789-00-D
HVMag-M-20625	5/8	5/8	3/4	5	2-1/4	52790-00-D	52791-00-D	52792-00-D	52793-00-D	52794-00-D
HVMag-L-20625	5/8	5/8	3/4	6	3-1/4	52795-00-D	52796-00-D	52797-00-D	52798-00-D	52799-00-D
HVMag-20750	3/4	3/4	1	4	2-1/8	52800-00-D	52801-00-D	52802-00-D	52803-00-D	52804-00-D
HVMag-M-20750	3/4	3/4	1	5	3	52805-00-D	52806-00-D	52807-00-D	52808-00-D	52809-00-D
HVMag-L-20750	3/4	3/4	1	6	3-3/4	52810-00-D	52811-00-D	52812-00-D	52813-00-D	52814-00-D
HVMag-21000	1	1	1-1/4	5	2-3/4	52815-00-D	52816-00-D	52817-00-D	52818-00-D	52819-00-D
HVMag-M-21000	1	1	1-1/4	6	3-1/2	52820-00-D	52821-00-D	52822-00-D	52823-00-D	52824-00-D
HVMag-L-21000	1	1	1-1/4	7	4-1/4	52825-00-D	52826-00-D	52827-00-D	52828-00-D	52829-00-D

\*LBS = Length Below Shank

### HVMag Metric Offering

Part Number	Diameter	Shank	LOC	OAL	LBS*	EDP	EDP	EDP	EDP	EDP	EDP
						.000 Radius	.25mm Radius	1mm Radius	2mm Radius	4mm Radius	5mm Radius
HVMag-10MM-	10	10	13	73	38	53578-00-D	53579-00-D	53580-00-D	53581-00-D		
HVMag-L-10MM-	10	10	13	100	52	53582-00-D	53583-00-D	53584-00-D	53585-00-D		
HVMag-12MM-	12	12	16	74	38	53586-00-D	54240-00-D	53587-00-D	53588-00-D	53589-00-D	53590-00-D
HVMag-M-12MM-	12	12	16	100	52	53591-00-D	54241-00-D	53592-00-D	53593-00-D	53594-00-D	53595-00-D
HVMag-L-12MM-	12	12	16	147	80	53596-00-D	54242-00-D	53597-00-D	53598-00-D	53599-00-D	53600-00-D
HVMag-16MM-	16	16	19	100	31	53601-00-D	54243-00-D	53602-00-D	53603-00-D	53604-00-D	53605-00-D
HVMag-M-16MM-	16	16	19	122	55	53606-00-D	54244-00-D	53607-00-D	53608-00-D	53609-00-D	53610-00-D
HVMag-L-16MM-	16	16	19	147	80	53611-00-D	54245-00-D	53612-00-D	53613-00-D	53614-00-D	53615-00-D
HVMag-20MM-	20	20	25	100	52	53616-00-D	54246-00-D	53617-00-D	53618-00-D	53619-00-D	53620-00-D
HVMag-M-20MM-	20	20	25	122	74	53621-00-D	54247-00-D	53622-00-D	53623-00-D	53624-00-D	53625-00-D
HVMag-L-20MM-	20	20	25	147	92	53626-00-D	54248-00-D	53627-00-D	53628-00-D	53629-00-D	53630-00-D
HVMag-25MM-	25	25	30	122	67	53631-00-D	54249-00-D	53632-00-D	53633-00-D	53634-00-D	53635-00-D
HVMag-M-25MM-	25	25	30	147	86	53636-00-D	54250-00-D	53637-00-D	53638-00-D	53639-00-D	53640-00-D
HVMag-L-25MM-	25	25	30	172	105	53641-00-D	54251-00-D	53642-00-D	53643-00-D	53644-00-D	53645-00-D

\*LBS = Length Below Shank

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.





The ARF Series is a time-honored workhorse in our aluminum cutting tool family. Designed as a 2 flute, rougher/finisher, this tool can pull “double duty” in your aluminum and non-ferrous applications. The high helix angle provides exceptional shearing action and chip removal. Available in lengths ranging from stub for aggressive roughing, to extended lengths for tall side milling cuts.

## Carbide Speeds and Feeds Chart for Non-Ferrous Materials

ARF Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/8"	S	0.0022	0.0020	0.0018	0.0018	0.0018	0.0018
	HP	0.0029	0.0029	0.0026	0.0026	0.0026	0.0026
	LP	0.0035	0.0038	0.0032	0.0032	0.0032	0.0032
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
5/16"	S	0.0038	0.0036	0.0031	0.0031	0.0031	0.0031
	HP	0.0050	0.0050	0.0045	0.0045	0.0045	0.0045
	LP	0.0061	0.0067	0.0056	0.0056	0.0056	0.0056
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
7/16"	S	0.0061	0.0058	0.0050	0.0050	0.0050	0.0050
	HP	0.0076	0.0076	0.0069	0.0069	0.0069	0.0069
	LP	0.0091	0.0102	0.0085	0.0085	0.0085	0.0085
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter  
Radial width .5 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.5 – 2.0 x Diameter  
Radial width .25 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
Effective Length of Cut  
Radial width .015 x Diameter

**Note!** Horsepower will be the limiting factor with larger diameter end mills.

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- Rough and Finish
- Higher Helix Aids in Chip Removal
- Performance Carbide
- Cutting Diameter Tolerance  $\pm .000/- .0015$

- Available Upon Request:
  - Radius Ends
  - Coolant Groves
  - Additional Coatings

Part Number	Diameter	Shank	LOC	OAL	EDP	TiCN EDP	ZrN EDP
ARF-ST-20125	1/8	1/8	1/4	1-1/2	32821-00-D	32821-89-D	32821-86-D
ARF-20125	1/8	1/8	3/8	1-1/2	32588-00-D	32588-89-D	32588-86-D
ARF-ST-20156	5/32	3/16	5/16	2	32829-00-D	32829-89-D	32829-86-D
ARF-20156	5/32	3/16	9/16	2	32596-00-D	32596-89-D	32596-86-D
ARF-ST-20187	3/16	3/16	5/16	2	32837-00-D	32837-89-D	32837-86-D
ARF-20187	3/16	3/16	9/16	2	32604-00-D	32604-89-D	32604-86-D
ARF-ST-20218	7/32	1/4	3/8	2-1/2	32845-00-D	32845-89-D	32845-86-D
ARF-20218	7/32	1/4	3/4	2-1/2	32612-00-D	32612-89-D	32612-86-D
ARF-ST-20250	1/4	1/4	3/8	2-1/2	32853-00-D	32853-89-D	32853-86-D
ARF-20250	1/4	1/4	3/4	2-1/2	32620-00-D	32620-89-D	32620-86-D
ARF-L-20250	1/4	1/4	1-1/4	3-1/4	32741-00-D	32741-89-D	32741-86-D
ARF-ST-20281	9/32	5/16	7/16	2-1/2	32861-00-D	32861-89-D	32861-86-D
ARF-20281	9/32	5/16	13/16	2-1/2	32628-00-D	32628-89-D	32628-86-D
ARF-ST-20312	5/16	5/16	7/16	2-1/2	32869-00-D	32869-89-D	32869-86-D
ARF-20312	5/16	5/16	13/16	2-1/2	32636-00-D	32636-89-D	32636-86-D
ARF-L-20312	5/16	5/16	1-1/4	3-1/2	32749-00-D	32749-89-D	32749-86-D
ARF-X-20312	5/16	5/16	2-1/8	4	32949-00-D	32949-89-D	32949-86-D
ARF-ST-20343	11/32	3/8	1/2	2-1/2	32877-00-D	32877-89-D	32877-86-D
ARF-20343	11/32	3/8	1	2-1/2	32644-00-D	32644-89-D	32644-86-D
ARF-ST-20375	3/8	3/8	1/2	2-1/2	32885-00-D	32885-89-D	32885-86-D
ARF-20375	3/8	3/8	1	2-1/2	32652-00-D	32652-89-D	32652-86-D
ARF-M-20375	3/8	3/8	1-1/4	3	51622-00-D	51622-89-D	51622-86-D
ARF-L-20375	3/8	3/8	1-1/2	4	32757-00-D	32757-89-D	32757-86-D
ARF-X-20375	3/8	3/8	2-1/2	6	32957-00-D	32957-89-D	32957-86-D
ARF-ST-20406	13/32	7/16	9/16	2-3/4	32893-00-D	32893-89-D	32893-86-D
ARF-20406	13/32	7/16	1	2-3/4	32660-00-D	32660-89-D	32660-86-D
ARF-ST-20437	7/16	7/16	9/16	2-3/4	32901-00-D	32901-89-D	32901-86-D
ARF-20437	7/16	7/16	1	2-3/4	32668-00-D	32668-89-D	32668-86-D
ARF-L-20437	7/16	7/16	2	4	32765-00-D	32765-89-D	32765-86-D
ARF-ST-20468	15/32	1/2	5/8	3	32909-00-D	32909-89-D	32909-86-D
ARF-20468	15/32	1/2	1-1/4	3	32676-00-D	32676-89-D	32676-86-D
ARF-ST-20500	1/2	1/2	5/8	3	32917-00-D	32917-89-D	32917-86-D
ARF-20500	1/2	1/2	1-1/4	3	32684-00-D	32684-89-D	32684-86-D
ARF-M-20500	1/2	1/2	1-5/8	4	51629-00-D	51629-89-D	51629-86-D
ARF-L-20500	1/2	1/2	2	4	32773-00-D	32773-89-D	32773-86-D
ARF-X-20500	1/2	1/2	3-1/8	6	32965-00-D	32965-89-D	32965-86-D
ARF-ST-20625	5/8	5/8	3/4	3-1/2	32925-00-D	32925-89-D	32925-86-D
ARF-20625	5/8	5/8	1-5/8	3-1/2	32692-00-D	32692-89-D	32692-86-D
ARF-M-20625	5/8	5/8	2-1/8	4	51636-00-D	51636-89-D	51636-86-D
ARF-L-20625	5/8	5/8	2-1/2	5	32781-00-D	32781-89-D	32781-86-D
ARF-X-20625	5/8	5/8	3-3/4	6	32973-00-D	32973-89-D	32973-86-D
ARF-ST-20750	3/4	3/4	1	4	32933-00-D	32933-89-D	32933-86-D
ARF-20750	3/4	3/4	1-5/8	4	32700-00-D	32700-89-D	32700-86-D
ARF-M-20750	3/4	3/4	2-1/4	5	32805-00-D	32805-89-D	32805-86-D
ARF-L-20750	3/4	3/4	3-1/4	6	32789-00-D	32789-89-D	32789-86-D
ARF-X-20750	3/4	3/4	4	6-1/2	32981-00-D	32981-89-D	32981-86-D
ARF-ST-21000	1	1	1-1/4	5	32941-00-D	32941-89-D	32941-86-D
ARF-21000	1	1	2	5	32708-00-D	32708-89-D	32708-86-D
ARF-M-21000	1	1	2-5/8	6	32813-00-D	32813-89-D	32813-86-D
ARF-L-21000	1	1	3-1/4	6	32797-00-D	32797-89-D	32797-86-D
ARF-X-21000	1	1	4-1/8	7	32989-00-D	32989-89-D	32989-86-D



The ARF-BN combines the proven geometry of our ARF 2 flute series with a precision ground, full ball radius. The higher helix and higher clearance angles provide a freer cutting ball with advanced shearing properties. When your non-ferrous application requires contour or 3-D work, the ARF-BN should be your tool of choice.

## Carbide Speeds and Feeds Chart for Non-Ferrous Materials

ARF-BN Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0026	0.0024	0.0020	0.0020	0.0020	0.0020
	HP	0.0034	0.0034	0.0030	0.0030	0.0030	0.0030
	LP	0.0043	0.0048	0.0043	0.0043	0.0043	0.0043
5/16"	S	0.0028	0.0027	0.0022	0.0022	0.0022	0.0022
	HP	0.0040	0.0040	0.0035	0.0035	0.0035	0.0035
	LP	0.0050	0.0056	0.0050	0.0050	0.0050	0.0050
3/8"	S	0.0038	0.0036	0.0030	0.0030	0.0030	0.0030
	HP	0.0051	0.0051	0.0045	0.0045	0.0045	0.0045
	LP	0.0064	0.0071	0.0064	0.0064	0.0064	0.0064
7/16"	S	0.0046	0.0043	0.0036	0.0036	0.0036	0.0036
	HP	0.0061	0.0061	0.0053	0.0053	0.0053	0.0053
	LP	0.0076	0.0085	0.0076	0.0076	0.0076	0.0076
1/2"	S	0.0060	0.0060	0.0050	0.0050	0.0050	0.0050
	HP	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	LP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
5/8"	S	0.0064	0.0061	0.0050	0.0050	0.0050	0.0050
	HP	0.0086	0.0086	0.0075	0.0075	0.0075	0.0075
	LP	0.0107	0.0119	0.0107	0.0107	0.0107	0.0107
3/4"	S	0.0068	0.0064	0.0054	0.0054	0.0054	0.0054
	HP	0.0097	0.0097	0.0085	0.0085	0.0085	0.0085
	LP	0.0122	0.0135	0.0122	0.0122	0.0122	0.0122
1"	S	0.0108	0.0102	0.0085	0.0085	0.0085	0.0085
	HP	0.0144	0.0144	0.0126	0.0126	0.0126	0.0126
	LP	0.0180	0.0200	0.0180	0.0180	0.0180	0.0180

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter  
Radial width .5 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.5 – 2.0 x Diameter  
Radial width .25 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
Effective Length of Cut  
Radial width .015 x Diameter

**Note!** Horsepower will be the limiting factor with larger diameter end mills.

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.

- Contour Milling
- High Helix
- Performance Carbide
- H6 Tolerance

- Available Upon Request:
  - Radius Ends
  - Coolant Groves
  - Additional Coatings

Part Number	Diameter	Shank	LOC	OAL	EDP	TiCN EDP	ZrN EDP
ARF-BN-ST-20250	1/4	1/4	3/8	2-1/2	33424-00-D	33424-89-D	33424-86-D
ARF-BN-20250	1/4	1/4	3/4	2-1/2	33360-00-D	33360-89-D	33360-86-D
ARF-BN-ST-20312	5/16	5/16	7/16	2-1/2	33432-00-D	33432-89-D	33432-86-D
ARF-BN-20312	5/16	5/16	13/16	2-1/2	33368-00-D	33368-89-D	33368-86-D
ARF-BN-ST-20375	3/8	3/8	1/2	2-1/2	33440-00-D	33440-89-D	33440-86-D
ARF-BN-20375	3/8	3/8	1	2-1/2	33376-00-D	33376-89-D	33376-86-D
ARF-BN-ST-20437	7/16	7/16	9/16	2-3/4	33448-00-D	33448-89-D	33448-86-D
ARF-BN-20437	7/16	7/16	1	2-3/4	33384-00-D	33384-89-D	33384-86-D
ARF-BN-ST-20500	1/2	1/2	5/8	3	33456-00-D	33456-89-D	33456-86-D
ARF-BN-20500	1/2	1/2	1-1/4	3	33392-00-D	33392-89-D	33392-86-D
ARF-BN-ST-20625	5/8	5/8	3/4	3-1/2	33464-00-D	33464-89-D	33464-86-D
ARF-BN-20625	5/8	5/8	1-5/8	3-1/2	33400-00-D	33400-89-D	33400-86-D
ARF-BN-ST-20750	3/4	3/4	1	4	33472-00-D	33472-89-D	33472-86-D
ARF-BN-20750	3/4	3/4	1-5/8	4	33408-00-D	33408-89-D	33408-86-D
ARF-BN- ST-21000	1	1	1-1/4	5	33480-00-D	33480-89-D	33480-86-D
ARF-BN-21000	1	1	2	5	33416-00-D	33416-89-D	33416-86-D



This is a new series that provides HVM geometry in a 2 flute precision ground, ball nose configuration. This tool is designed for deep reach contouring and 3-D milling where a neck-relieved, extended shank is required.

## Carbide Speeds and Feeds Chart for Non-Ferrous Materials

HVM-BN Materials		Aluminum Alloys	Aluminum Cast	Aluminum	Copper	Brass	Magnesium
Diameter	Description	6061, 7075	Sand & Permanent Mold	>10% Silicon High Silicon Based	Cast, Wrought	Yellow, Red, Leaded Brass	Cast, Wrought
	SFM	800 - Max	250 - 600	600 - 1000	700 - 1000	500 - 900	500 - 900
1/4"	S	0.0034	0.0032	0.0028	0.0028	0.0028	0.0028
	HP	0.0043	0.0043	0.0038	0.0038	0.0038	0.0038
	LP	0.0051	0.0057	0.0048	0.0048	0.0048	0.0048
3/8"	S	0.0051	0.0048	0.0042	0.0042	0.0042	0.0042
	HP	0.0064	0.0064	0.0058	0.0058	0.0058	0.0058
	LP	0.0077	0.0086	0.0071	0.0071	0.0071	0.0071
1/2"	S	0.0080	0.0080	0.0070	0.0070	0.0070	0.0070
	HP	0.0100	0.0100	0.0090	0.0090	0.0090	0.0090
	LP	0.0120	0.0120	0.0100	0.0100	0.0100	0.0100
5/8"	S	0.0086	0.0081	0.0071	0.0071	0.0071	0.0071
	HP	0.0107	0.0107	0.0096	0.0096	0.0096	0.0096
	LP	0.0128	0.0143	0.0119	0.0119	0.0119	0.0119
3/4"	S	0.0091	0.0086	0.0075	0.0075	0.0075	0.0075
	HP	0.0122	0.0122	0.0109	0.0109	0.0109	0.0109
	LP	0.0146	0.0162	0.0135	0.0135	0.0135	0.0135
1"	S	0.0144	0.0136	0.0119	0.0119	0.0119	0.0119
	HP	0.0180	0.0180	0.0162	0.0162	0.0162	0.0162
	LP	0.0216	0.0240	0.0200	0.0200	0.0200	0.0200

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter  
Radial width .5 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.5 – 2.0 x Diameter  
Radial width .3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
Effective Length of Cut  
Radial width .02 x Diameter

**Note!** Horsepower will be the limiting factor with larger diameter end mills.

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.

- Performance Carbide
- High Speed Machining
- Reduced Neck for Reach and Stability
- Full Radius Ball

- Available Upon Request:
  - Radius Ends
  - Coolant Groves
  - Additional Coatings

Part Number	Diameter	Shank	LOC	LBS*	Neck Diameter	OAL	EDP	TiCN EDP	ZrN EDP
HVM-BN-RN-20250	1/4	1/4	3/8	1-1/8	0.235	2-1/2	54323-00-D	54323-89-D	54323-86-D
HVM-BN-RN-M-20250	1/4	1/4	3/8	2-1/8	0.235	4	54324-00-D	54324-89-D	54324-86-D
HVM-BN-RN-20375	3/8	3/8	1/2	1-1/8	0.355	2-1/2	54326-00-D	54326-89-D	54326-86-D
HVM-BN-RN-M-20375	3/8	3/8	1/2	2-1/8	0.355	4	54327-00-D	54327-89-D	54327-86-D
HVM-BN-20500	1/2	1/2	5/8	1-3/8	0.475	3	54328-00-D	54328-89-D	54328-86-D
HVM-BN-M-20500	1/2	1/2	5/8	2-1/8	0.475	4	54329-00-D	54329-89-D	54329-86-D
HVM-BN-L-20500	1/2	1/2	5/8	3-3/8	0.475	6	54330-00-D	54330-89-D	54330-86-D
HVM-BN-RN-20625	5/8	5/8	3/4	1-5/8	0.590	4	54331-00-D	54331-89-D	54331-86-D
HVM-BN-RN-M-20625	5/8	5/8	3/4	2-1/8	0.590	6	54332-00-D	54332-89-D	54332-86-D
HVM-BN-RN-L-20625	5/8	5/8	3/4	3-3/8	0.590	6	54333-00-D	54333-89-D	54333-86-D
HVM-BN-RN-20750	3/4	3/4	1	2	0.715	4	54334-00-D	54334-89-D	54334-86-D
HVM-BN-RN-M-20750	3/4	3/4	1	2-1/2	0.715	6	54335-00-D	54335-89-D	54335-86-D
HVM-BN-RN-L-20750	3/4	3/4	1	3-3/8	0.715	6	54336-00-D	54336-89-D	54336-86-D
HVM-BN-RN-21000	1	1	1-1/4	2-5/8	0.960	5	54338-00-D	54338-89-D	54338-86-D
HVM-BN-RN-M-21000	1	1	1-1/4	3-3/8	0.960	7	54339-00-D	54339-89-D	54339-86-D
HVM-BN-RN-L-21000	1	1	1-1/4	4-3/8	0.960	7	54340-00-D	54340-89-D	54340-86-D

\*LBS: Length Below Shank

# End Mills

## Titanium and Ferrous

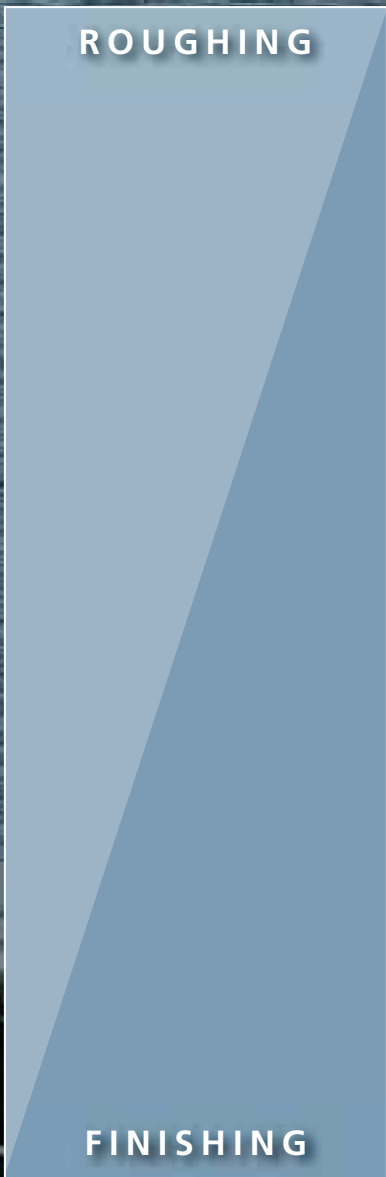
First quality, M42 and powdered  
metal tools designed specifically  
for titanium and ferrous alloy  
machining.



# Titanium

## and Ferrous Alloys

## Cobalt and Powdered Metal



SERIES	DESCRIPTION	PAGE
Fine Pitch Rougher	Multi-Flute, 30 Degree Helix, Powdered Metal, Profile, Slot and Pocket	Page 38
Fine Pitch Rougher	Multi-Flute, 30 Degree Helix, Cobalt, Profile, Slot and Pocket	Page 40
Fine Pitch Rougher BN	Multi-Flute, 30 Degree Helix, Cobalt, Contour Milling, Ball Nose	Page 42
Crest-Kut <sup>2</sup> ™	Multi-Flute, 37 Degree Helix, Cobalt, Ground Flutes	Page 44
Crest-Kut®	Multi-Flute, 30 Degree Helix, Cobalt, Milled Flutes	Page 46
Crest-Kut® Reduced Neck	Multi-Flute, 30 Degree Helix, Cobalt, Profile, Slot and Pocket, Reduced Neck	Page 48
Ti35	Multi-Flute, 35 Degree Helix, Cobalt, Rougher/Finisher	Page 50
Ni30	Multi-Flute, 30 Degree Helix, Cobalt, Rougher/Finisher for Nickel Based Alloys	Page 52
WM Series	Multi-Flute, 45 Degree Helix, Powdered Metal, Finisher	Page 54
TiF35	Multi-Flute, 35 Degree Helix, Cobalt, Finisher, Right Hand	Page 56
TiF35 LH	Multi-Flute, 35 Degree Helix, Cobalt, Finisher, Left Hand	Page 58
NiF30	Multi-Flute, 30 Degree Helix, Cobalt, Finisher for Nickel Based Alloys	Page 60



These end mills are intended for your most challenging roughing applications in titanium and ferrous alloys. The fine pitch serrations create smaller chips and aid in evacuation. Powdered Metal substrates provide an excellent balance of toughness and abrasion resistance required to machine medium to medium-hard materials. All tools are supplied as center cutting.

## Powdered Metal Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 15XX	40XX, 41XX, 86XX, Series	316L	416, 440C	15-5PH, AM-XX Series	Gray	Ductile	A286, Haynes	Pure	Cast/Wrought Alpha - Beta
	PM SFM	70 - 140	40 - 110	40 - 100	60 - 120	40 - 80	70 - 180	50 - 90	5 - 40	70 - 120	50 - 100
1/2"	S	0.0025	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0015	0.0025	0.0020
	HP	0.0030	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0015	0.0030	0.0023
	LP	0.0037	0.0035	0.0035	0.0035	0.0035	0.0045	0.0040	0.0035	0.0037	0.0035
5/8"	S	0.0033	0.0024	0.0027	0.0027	0.0024	0.0024	0.0027	0.0017	0.0033	0.0025
	HP	0.0038	0.0026	0.0031	0.0031	0.0025	0.0025	0.0031	0.0019	0.0038	0.0029
	LP	0.0049	0.0044	0.0044	0.0044	0.0044	0.0057	0.0050	0.0044	0.0046	0.0044
3/4"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
1"	S	0.0054	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0027	0.0054	0.0041
	HP	0.0060	0.0040	0.0050	0.0050	0.0040	0.0040	0.0050	0.0030	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0074	0.0070
1-1/4"	S	0.0069	0.0046	0.0058	0.0058	0.0046	0.0046	0.0058	0.0035	0.0069	0.0053
	HP	0.0075	0.0050	0.0063	0.0063	0.0050	0.0050	0.0063	0.0038	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0093	0.0088
1-1/2"	S	0.0081	0.0054	0.0068	0.0068	0.0054	0.0054	0.0068	0.0041	0.0081	0.0062
	HP	0.0090	0.0060	0.0075	0.0075	0.0060	0.0060	0.0075	0.0045	0.0090	0.0069
	LP	0.0111	0.0105	0.0105	0.0105	0.0105	0.0135	0.0120	0.0105	0.0111	0.0105
2"	S	0.0108	0.0072	0.0090	0.0090	0.0072	0.0072	0.0090	0.0054	0.0108	0.0083
	HP	0.0120	0.0080	0.0100	0.0100	0.0080	0.0080	0.0100	0.0060	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0148	0.0140

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to 2.0 x Diameter  
Radial width >.3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to 3.0 x Diameter  
Radial width >.05 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your tools, call us toll free at:  
Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.



- Powdered Metal Substrate
- 30 Degree Helix
- Large Core for Rigidity
- Cutting Diameter Tolerance +.005/- .000
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	OAL	No. of Flutes	EDP	AITiN EDP	AICrN EDP
1/2	1/2	1/2	2-1/2	4	77921-00	77921-85	77921-70
1/2	1/2	1-1/4	3-1/4	4	77922-00	77922-85	77922-70
1/2	1/2	2	4	4	77924-00	77924-85	77924-70
5/8	5/8	5/8	2-3/4	4	77925-00	77925-85	77925-70
5/8	5/8	1-5/8	3-3/4	4	77927-00	77927-85	77927-70
5/8	5/8	2-1/2	4-5/8	4	77928-00	77928-85	77928-70
3/4	3/4	3/4	3	4	77930-00	77930-85	77930-70
3/4	3/4	1-5/8	3-7/8	4	77931-00	77931-85	77931-70
3/4	3/4	3	5-1/4	4	77933-00	77933-85	77933-70
1	1	1	3-1/2	5	77934-00	77934-85	77934-70
1	1	2	4-1/2	5	77936-00	77936-85	77936-70
1	1	3	5-1/2	5	77937-00	77937-85	77937-70
1	1	4	6-1/2	5	77939-00	77939-85	77939-70
1-1/4	1-1/4	1-1/4	3-3/4	6	77940-00	77940-85	77940-70
1-1/4	1-1/4	2	4-1/2	6	77942-00	77942-85	77942-70
1-1/4	1-1/4	3	5-1/2	6	77943-00	77943-85	77943-70
1-1/4	1-1/4	4	6-1/2	6	77945-00	77945-85	77945-70
1-1/2	1-1/4	2	4-1/2	6	77946-00	77946-85	77946-70
1-1/2	1-1/4	3	5-1/2	6	77948-00	77948-85	77948-70
1-1/2	1-1/4	4	6-1/2	6	77949-00	77949-85	77949-70
2	2	2	5-3/4	8	77951-00	77951-85	77951-70
2	2	3	6-3/4	8	77952-00	77952-85	77952-70
2	2	4	7-3/4	8	77954-00	77954-85	77954-70
2	2	6	9-3/4	8	77955-00	77955-85	77955-70

To order Brubaker brand tools, please take base part number and add a “-B” at the end of the number.

**Example**      **Brubaker Brand Tool**  
77800-00      77800-00-B

To order Fastcut brand tools, please take base part number and add a “-F” at the end of the number.

**Example**      **Fastcut Brand Tool**  
77800-00      77800-00-F



These tools are engineered for high temp alloys such as titanium and stainless steel. Our M42 Fine Pitch Roughers generate small chips for improved evacuation. Center cutting geometry permits ramping, plunging and slotting. All tools are supplied as center cutting.

## Cobalt Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 15XX	40XX, 41XX, 86XX, Series	316L	416, 440C	15-5PH, AM-XX Series	Gray	Ductile	A286, Haynes	Pure	Cast/Wrought Alpha - Beta
Cobalt SFM		60 - 120	30 - 100	30 - 90	50 - 110	30 - 70	60 - 160	40 - 80	5 - 35	55 - 100	40 - 90
1/4"	S	0.0019	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0011	0.0019	0.0015
	HP	0.0023	0.0015	0.0019	0.0019	0.0015	0.0015	0.0019	0.0011	0.0023	0.0017
	LP	0.0028	0.0026	0.0026	0.0026	0.0026	0.0034	0.0030	0.0026	0.0028	0.0026
3/8"	S	0.0019	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0011	0.0019	0.0015
	HP	0.0023	0.0015	0.0019	0.0019	0.0015	0.0015	0.0019	0.0011	0.0023	0.0017
	LP	0.0028	0.0026	0.0026	0.0026	0.0026	0.0034	0.0030	0.0026	0.0028	0.0026
1/2"	S	0.0025	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0015	0.0025	0.0020
	HP	0.0030	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0015	0.0030	0.0023
	LP	0.0037	0.0035	0.0035	0.0035	0.0035	0.0045	0.0040	0.0035	0.0037	0.0035
5/8"	S	0.0033	0.0024	0.0027	0.0027	0.0024	0.0024	0.0027	0.0017	0.0033	0.0025
	HP	0.0038	0.0026	0.0031	0.0031	0.0025	0.0025	0.0031	0.0019	0.0038	0.0029
	LP	0.0049	0.0044	0.0044	0.0044	0.0044	0.0057	0.0050	0.0044	0.0046	0.0044
3/4"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
1"	S	0.0054	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0027	0.0054	0.0041
	HP	0.0060	0.0040	0.0050	0.0050	0.0040	0.0040	0.0050	0.0030	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0074	0.0070
1-1/4"	S	0.0069	0.0046	0.0058	0.0058	0.0046	0.0046	0.0058	0.0035	0.0069	0.0053
	HP	0.0075	0.0050	0.0063	0.0063	0.0050	0.0050	0.0063	0.0038	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0093	0.0088
1-1/2"	S	0.0081	0.0054	0.0068	0.0068	0.0054	0.0054	0.0068	0.0041	0.0081	0.0062
	HP	0.0090	0.0060	0.0075	0.0075	0.0060	0.0060	0.0075	0.0045	0.0090	0.0069
	LP	0.0111	0.0105	0.0105	0.0105	0.0105	0.0135	0.0120	0.0105	0.0111	0.0105
2"	S	0.0108	0.0072	0.0090	0.0090	0.0072	0.0072	0.0090	0.0054	0.0108	0.0083
	HP	0.0120	0.0080	0.0100	0.0100	0.0080	0.0080	0.0100	0.0060	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0148	0.0140

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to 2.0 x Diameter  
Radial width >.3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to 3.0 x Diameter  
Radial width >.05 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your tools, call us toll free at:  
Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.

# Fine Pitch Rougher-M42

**Cobalt**

- M42, 8% Cobalt
- 30 Degree Helix
- Large Core for Rigidity
- Cutting Diameter Tolerance +.005/- .000
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	OAL	No. of Flutes	EDP	AITiN EDP	AICrN EDP
1/4	3/8	1/4	2-1/16	3	97004-00	97004-85	97004-70
3/8	3/8	3/8	2-5/32	4	97014-00	97014-85	97014-70
1/2	1/2	1/2	2-1/2	4	97028-00	97028-85	97028-70
1/2	1/2	1-1/4	3-1/4	4	96328-00	96328-85	96328-70
1/2	1/2	2	4	4	96429-00	96429-85	96429-70
5/8	5/8	5/8	2-3/4	4	97036-00	97036-85	97036-70
5/8	5/8	1-5/8	3-3/4	4	96336-00	96336-85	96336-70
5/8	5/8	2-1/2	4-5/8	4	96437-00	96437-85	96437-70
3/4	3/4	3/4	2-7/8	4	97045-00	97045-85	97045-70
3/4	3/4	1-5/8	3-7/8	4	96345-00	96345-85	96345-70
3/4	3/4	3	5-1/4	4	96446-00	96446-85	96446-70
7/8	3/4	1-7/8	4-1/8	5	96354-00	96354-85	96354-70
1	1	1	3-1/2	5	97066-00	97066-85	97066-70
1	1	2	4-1/2	5	96366-00	96366-85	96366-70
1	1	3	5-1/2	5	96467-00	96467-85	96467-70
1	1	4	6-1/2	5	96468-00	96468-85	96468-70
1-1/4	1-1/4	1-1/4	3-3/4	6	97075-00	97075-85	97075-70
1-1/4	1-1/4	2	4-1/2	6	96375-00	96375-85	96375-70
1-1/4	1-1/4	3	5-1/2	6	96476-00	96476-85	96476-70
1-1/4	1-1/4	4	6-1/2	6	96477-00	96477-85	96477-70
1-1/2	1-1/4	2	4-1/2	6	96383-00	96383-85	96383-70
1-1/2	1-1/4	3	5-1/2	6	96484-00	96484-85	96484-70
1-1/2	1-1/4	4	6-1/2	6	96485-00	96485-85	96485-70
2	2	2	5-3/4	8	96396-00	96396-85	96396-70
2	2	3	6-3/4	8	96397-00	96397-85	96397-70
2	2	4	7-3/4	8	96398-00	96398-85	96398-70
2	2	6	9-3/4	8	96399-00	96399-85	96399-70

To order Brubaker brand tools, please take base part number and add a "-B" at the end of the number.

**Example**    **Brubaker Brand Tool**  
77800-00    77800-00-B

To order Fastcut brand tools, please take base part number and add a "-F" at the end of the number.

**Example**    **Fastcut Brand Tool**  
77800-00    77800-00-F



These tools have the same performance characteristics in titanium and ferrous materials as our Fine Pitch Roughers. The Ball Nose is provided for contouring operations.

## Cobalt Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 15XX	40XX, 41XX, 86XX, Series	316L	416, 440C	15-5PH, AM-XX Series	Gray	Ductile	A286, Haynes	Pure	Cast/Wrought Alpha - Beta
	Cobalt SFM	60 - 120	30 - 100	30 - 90	50 - 110	30 - 70	60 - 160	40 - 80	5 - 35	55 - 100	40 - 90
1/2"	S	0.0025	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0015	0.0025	0.0020
	HP	0.0030	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0015	0.0030	0.0023
	LP	0.0037	0.0035	0.0035	0.0035	0.0035	0.0045	0.0040	0.0035	0.0037	0.0035
5/8"	S	0.0033	0.0024	0.0027	0.0027	0.0024	0.0024	0.0027	0.0017	0.0033	0.0025
	HP	0.0038	0.0026	0.0031	0.0031	0.0025	0.0025	0.0031	0.0019	0.0038	0.0029
	LP	0.0049	0.0044	0.0044	0.0044	0.0044	0.0057	0.0050	0.0044	0.0046	0.0044
3/4"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
1"	S	0.0054	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0027	0.0054	0.0041
	HP	0.0060	0.0040	0.0050	0.0050	0.0040	0.0040	0.0050	0.0030	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0074	0.0070
1-1/4"	S	0.0069	0.0046	0.0058	0.0058	0.0046	0.0046	0.0058	0.0035	0.0069	0.0053
	HP	0.0075	0.0050	0.0063	0.0063	0.0050	0.0050	0.0063	0.0038	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0093	0.0088
1-1/2"	S	0.0081	0.0054	0.0068	0.0068	0.0054	0.0054	0.0068	0.0041	0.0081	0.0062
	HP	0.0090	0.0060	0.0075	0.0075	0.0060	0.0060	0.0075	0.0045	0.0090	0.0069
	LP	0.0111	0.0105	0.0105	0.0105	0.0105	0.0135	0.0120	0.0105	0.0111	0.0105
2"	S	0.0108	0.0072	0.0090	0.0090	0.0072	0.0072	0.0090	0.0054	0.0108	0.0083
	HP	0.0120	0.0080	0.0100	0.0100	0.0080	0.0080	0.0100	0.0060	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0148	0.0140

**S = SLOTTING**  
Axial Depth up to 1.0 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to 2.0 x Diameter  
Radial width >.3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to 3.0 x Diameter  
Radial width >.05 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your tools, call us toll free at:  
Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.

# Fine Pitch Rougher-M42, Ball Nose

**Cobalt**

- M42, Cobalt
- Cutting Diameter Tolerance +.005/- .000
- Contour Milling
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	OAL	No. of Flutes	EDP	AITiN EDP	AICrN EDP
1/2	1/2	1-1/4	3-1/4	4	96528-00	96528-85	96528-70
5/8	5/8	1-5/8	3-3/4	4	96536-00	96536-85	96536-70
3/4	3/4	1-5/8	3-7/8	4	96545-00	96545-85	96545-70
1	1	2	4-1/2	5	96566-00	96566-85	96566-70
1-1/4	1-1/4	2	4-1/2	6	96575-00	96575-85	96575-70
1-1/2	1-1/4	2	4-1/2	6	96583-00	96583-85	96583-70
2	2	4	7-3/4	8	96597-00	96597-85	96597-70
2	2	6	9-3/4	8	96598-00	96598-85	96598-70

To order Brubaker brand tools, please take base part number and add a “-B” at the end of the number.

**Example**      **Brubaker Brand Tool**  
77800-00      77800-00-B

To order Fastcut brand tools, please take base part number and add a “-F” at the end of the number.

**Example**      **Fastcut Brand Tool**  
77800-00      77800-00-F



The Crest-Kut<sup>2</sup>™ end mills are the next generation of this renowned tool. Ground completely on a CNC platform, this next generation allows a heavier cut with a more uniform chip. Preferred by some operators for peripheral milling. All tools are supplied as center cutting.

## Cobalt Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 15XX	40XX, 41XX, 86XX, Series	316L	416, 440C	15-5PH, AM-XX Series	Gray	Ductile	A286, Haynes	Pure	Cast/Wrought Alpha - Beta
Cobalt SFM		60 - 120	30 - 100	30 - 90	50 - 110	30 - 70	60 - 160	40 - 80	5 - 35	55 - 100	40 - 90
1/2"	HP	0.0030	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0015	0.0030	0.0023
	LP	0.0037	0.0035	0.0035	0.0035	0.0035	0.0045	0.0040	0.0035	0.0037	0.0035
5/8"	HP	0.0038	0.0026	0.0031	0.0031	0.0025	0.0025	0.0031	0.0019	0.0038	0.0029
	LP	0.0049	0.0044	0.0044	0.0044	0.0044	0.0057	0.0050	0.0044	0.0046	0.0044
3/4"	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
1"	HP	0.0060	0.0040	0.0050	0.0050	0.0040	0.0040	0.0050	0.0030	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0074	0.0070
1-1/4"	HP	0.0075	0.0050	0.0063	0.0063	0.0050	0.0050	0.0063	0.0038	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0093	0.0088
1-1/2"	HP	0.0090	0.0060	0.0075	0.0075	0.0060	0.0060	0.0075	0.0045	0.0090	0.0069
	LP	0.0111	0.0105	0.0105	0.0105	0.0105	0.0135	0.0120	0.0105	0.0111	0.0105
2"	HP	0.0120	0.0080	0.0100	0.0100	0.0080	0.0080	0.0100	0.0060	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0148	0.0140

**HP = HEAVY PERIPHERAL**  
Axial Depth up to 2.0 x Diameter  
Radial width >.3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to 3.0 x Diameter  
Radial width >.05 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your Weldon tools, call us toll free at 800.622.7742 and ask to speak to our Technical Support Department.



# Crest-Kut<sup>2</sup>™ End Mill, Ground

Cobalt

- M42, Cobalt
- 37 Degree Helix
- Longer Tool Life
- Cutting Diameter Tolerance +.003/- .003
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Part Number	Diameter	Shank	LOC	OAL	No. of Flutes	EDP	AITIN EDP	AICrN EDP
KP2AC16-3A	1/2	1/2	2	4	4	77957-00-W	77957-85-W	77957-70-W
KP2AC16-3B	1/2	1/2	3	5	4	77958-00-W	77958-85-W	77958-70-W
KP2AC20-4A	5/8	5/8	2-1/2	4-5/8	4	77960-00-W	77960-85-W	77960-70-W
KP2AC24-5	3/4	3/4	2-1/4	4-1/2	4	77961-00-W	77961-85-W	77961-70-W
KP2AC24-5A	3/4	3/4	3	5-1/4	4	77963-00-W	77963-85-W	77963-70-W
KP2AC32-7	1	1	2	4-1/2	4	77964-00-W	77964-85-W	77964-70-W
KP2AC32-7A	1	1	3	5-1/2	4	77966-00-W	77966-85-W	77966-70-W
KP2SC32-7	1	1	2	4-1/2	6	77967-00-W	77967-85-W	77967-70-W
KP2SC32-7A	1	1	3	5-1/2	6	77969-00-W	77969-85-W	77969-70-W
KP2SC32-7B	1	1	4	6-1/2	6	77970-00-W	77970-85-W	77970-70-W
KP2SC40-8	1-1/4	1-1/4	2	4-1/2	6	77972-00-W	77972-85-W	77972-70-W
KP2SC40-8A	1-1/4	1-1/4	3	5-1/2	6	77973-00-W	77973-85-W	77973-70-W
KP2SC40-8B	1-1/4	1-1/4	4	6-1/2	6	77974-00-W	77974-85-W	77974-70-W
KP2SC40-8D	1-1/4	1-1/4	6	8-1/2	6	77975-00-W	77975-85-W	77975-70-W
KP2SC48-8A	1-1/2	1-1/4	3	5-1/2	6	77976-00-W	77976-85-W	77976-70-W
KP2SC48-8B	1-1/2	1-1/4	4	6-1/2	6	77977-00-W	77977-85-W	77977-70-W
KP2SC48-8D	1-1/2	1-1/4	6	8-1/2	6	77978-00-W	77978-85-W	77978-70-W
KP2SC64-10A	2	2	3	6-3/4	6	77979-00-W	77979-85-W	77979-70-W
KP2SC64-10B	2	2	4	7-3/4	6	77980-00-W	77980-85-W	77980-70-W
KP2SC64-10D	2	2	6	9-3/4	6	77981-00-W	77981-85-W	77981-70-W
KP2EC64-10B	2	2	4	7-3/4	8	77982-00-W	77982-85-W	77982-70-W
KP2EC64-10D	2	2	6	9-3/4	8	77983-00-W	77983-85-W	77983-70-W

**Powdered Metal available upon request.**



Our original Crest-Kut® end mills are a time proven design for superior metal removal rates combined with excellent finish in titanium and ferrous alloys. The sinusoidal wave form minimizes vibration and generates a chip form that improves evacuation and minimizes chip re-cutting. Excels in both peripheral and slotting operations. All tools are supplied as center cutting.

## Cobalt Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 15XX	40XX, 41XX, 86XX, Series	316L	416, 440C	15-5PH, AM-XX Series	Gray	Ductile	A286, Haynes	Pure	Cast/Wrought Alpha - Beta
Cobalt SFM		60 - 120	30 - 100	30 - 90	50 - 110	30 - 70	60 - 160	40 - 80	5 - 35	55 - 100	40 - 90
1/2"	S	0.0025	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0015	0.0025	0.0020
	HP	0.0030	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0015	0.0030	0.0023
	LP	0.0037	0.0035	0.0035	0.0035	0.0035	0.0045	0.0040	0.0035	0.0037	0.0035
5/8"	S	0.0033	0.0024	0.0027	0.0027	0.0024	0.0024	0.0027	0.0017	0.0033	0.0025
	HP	0.0038	0.0026	0.0031	0.0031	0.0025	0.0025	0.0031	0.0019	0.0038	0.0029
	LP	0.0049	0.0044	0.0044	0.0044	0.0044	0.0057	0.0050	0.0044	0.0046	0.0044
3/4"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
1"	S	0.0054	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0027	0.0054	0.0041
	HP	0.0060	0.0040	0.0050	0.0050	0.0040	0.0040	0.0050	0.0030	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0074	0.0070
1-1/4"	S	0.0069	0.0046	0.0058	0.0058	0.0046	0.0046	0.0058	0.0035	0.0069	0.0053
	HP	0.0075	0.0050	0.0063	0.0063	0.0050	0.0050	0.0063	0.0038	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0093	0.0088
1-1/2"	S	0.0081	0.0054	0.0068	0.0068	0.0054	0.0054	0.0068	0.0041	0.0081	0.0062
	HP	0.0090	0.0060	0.0075	0.0075	0.0060	0.0060	0.0075	0.0045	0.0090	0.0069
	LP	0.0111	0.0105	0.0105	0.0105	0.0105	0.0135	0.0120	0.0105	0.0111	0.0105
2"	S	0.0108	0.0072	0.0090	0.0090	0.0072	0.0072	0.0090	0.0054	0.0108	0.0083
	HP	0.0120	0.0080	0.0100	0.0100	0.0080	0.0080	0.0100	0.0060	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0148	0.0140

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**HP = HEAVY PERIPHERAL**  
Axial Depth up to 2.0 x Diameter  
Radial width >.3 x Diameter

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**LP = LIGHT PERIPHERAL**  
Axial Depth up to 3.0 x Diameter  
Radial width >.05 x Diameter

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your Weldon tools, call us toll free at 800.622.7742 and ask to speak to our Technical Support Department.





- M42, Cobalt
- 30 Degree Helix
- Rough/Finish in One Operation
- Cutting Diameter Tolerance +.003/-.003
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Part Number	Diameter	Shank	LOC	OAL	No. of Flutes	Radius	EDP	AITIN EDP	AICrN EDP
KPAC16-3A	1/2	1/2	2	4	4		66502-00-W	66502-85-W	66502-70-W
KPAC16-3B	1/2	1/2	3	5	4		66504-00-W	66504-85-W	66504-70-W
KPAC20-4A	5/8	5/8	2-1/2	4-5/8	4		66506-00-W	66506-85-W	66506-70-W
KPAC24-5	3/4	3/4	2-1/4	4-1/2	4		66500-00-W	66500-85-W	66500-70-W
KPAC24-5A	3/4	3/4	3	5-1/4	4		66508-00-W	66508-85-W	66508-70-W
KPAC24-5D	3/4	3/4	4	6-1/4	4		66501-00-W	66501-85-W	66501-70-W
KPAC32-7	1	1	2	4-1/2	4		66510-00-W	66510-85-W	66510-70-W
KPAC32-7A	1	1	3	5-1/2	4		66523-00-W	66523-85-W	66523-70-W
KPAC32-7B	1	1	4	6-1/2	4		66512-00-W	66512-85-W	66512-70-W
KPSC32-7	1	1	2	4-1/2	6		66602-00-W	66602-85-W	66602-70-W
KPSC32-7A	1	1	3	5-1/4	6		66600-00-W	66600-85-W	66600-70-W
KPSC32-7B	1	1	4	6-1/2	6		66604-00-W	66604-85-W	66604-70-W
KPSC40-8	1-1/4	1-1/4	2	4-1/2	6		66606-00-W	66606-85-W	66606-70-W
KPSC40-8A	1-1/4	1-1/4	3	5-1/2	6		66608-00-W	66608-85-W	66608-70-W
KPSC40-8B	1-1/4	1-1/4	4	6-1/2	6		66610-00-W	66610-85-W	66610-70-W
KPSC40-8D	1-1/4	1-1/4	6	8-1/2	6		66612-00-W	66612-85-W	66612-70-W
KPAC48-8	1-1/2	1-1/4	4	6-1/2	4		66514-00-W	66514-85-W	66514-70-W
KPSC48-8B	1-1/2	1-1/4	2	4-1/2	6		66601-00-W	66601-85-W	66601-70-W
KPSC48-8A	1-1/2	1-1/4	3	5-1/2	6		66633-00-W	66633-85-W	66633-70-W
KPSC48-8B	1-1/2	1-1/4	4	6-1/2	6		66614-00-W	66614-85-W	66614-70-W
KPSC48-8D	1-1/2	1-1/4	6	8-1/2	6		66640-00-W	66640-85-W	66640-70-W
KPSC64-10	2	2	2	5-3/4	6		66641-00-W	66641-85-W	66641-70-W
KPSC64-10A	2	2	3	6-3/4	6		66642-00-W	66642-85-W	66642-70-W
KPSC64-10B	2	2	4	7-3/4	6		66616-00-W	66616-85-W	66616-70-W
KPSC64-10C	2	2	6	9-3/4	6		66618-00-W	66618-85-W	66618-70-W
KPEC64-10B	2	2	4	7-3/4	8		66620-00-W	66620-85-W	66620-70-W
KPEC64-10C	2	2	6	9-3/4	8		66622-00-W	66622-85-W	66622-70-W
KPSC64-10B125	2	2	4	7-3/4	6	0.125	66700-00-W	66700-85-W	66700-70-W
KPSC64-10B250	2	2	4	7-3/4	6	0.250	66702-00-W	66702-85-W	66702-70-W
KPSC64-10B375	2	2	4	7-3/4	6	0.375	66704-00-W	66704-85-W	66704-70-W
KPSC64-10B125	2	2	6	9-3/4	6	0.125	66712-00-W	66712-85-W	66712-70-W
KPSC64-10B250	2	2	6	9-3/4	6	0.250	66714-00-W	66714-85-W	66714-70-W
KPSC64-10B375	2	2	6	9-3/4	6	0.375	66716-00-W	66716-85-W	66716-70-W

**Powdered Metal available upon request.**



A reduced neck for reach and stability enables this tool to rough and finish in hard to reach areas where heavier cuts are required over a conventional end mill. All tools are supplied as center cutting.

## Cobalt Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 15XX	40XX, 41XX, 86XX, Series	316L	416, 440C	15-5PH, AM-XX Series	Gray	Ductile	A286, Haynes	Pure	Cast/Wrought Alpha - Beta
Cobalt SFM		60 - 120	30 - 100	30 - 90	50 - 110	30 - 70	60 - 160	40 - 80	5 - 35	55 - 100	40 - 90
3/4"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
1"	S	0.0054	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0027	0.0054	0.0041
	HP	0.0060	0.0040	0.0050	0.0050	0.0040	0.0040	0.0050	0.0030	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0074	0.0070
1-1/4"	S	0.0069	0.0046	0.0058	0.0058	0.0046	0.0046	0.0058	0.0035	0.0069	0.0053
	HP	0.0075	0.0050	0.0063	0.0063	0.0050	0.0050	0.0063	0.0038	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0093	0.0088
1-1/2"	S	0.0081	0.0054	0.0068	0.0068	0.0054	0.0054	0.0068	0.0041	0.0081	0.0062
	HP	0.0090	0.0060	0.0075	0.0075	0.0060	0.0060	0.0075	0.0045	0.0090	0.0069
	LP	0.0111	0.0105	0.0105	0.0105	0.0105	0.0135	0.0120	0.0105	0.0111	0.0105
2"	S	0.0108	0.0072	0.0090	0.0090	0.0072	0.0072	0.0090	0.0054	0.0108	0.0083
	HP	0.0120	0.0080	0.0100	0.0100	0.0080	0.0080	0.0100	0.0060	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0148	0.0140

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**HP = HEAVY PERIPHERAL**  
Axial Depth up to 2.0 x Diameter  
Radial width >.3 x Diameter

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**LP = LIGHT PERIPHERAL**  
Axial Depth up to 3.0 x Diameter  
Radial width >.05 x Diameter

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your Weldon tools, call us toll free at 800.622.7742 and ask to speak to our Technical Support Department.



- Neck Portion for Extended Reach
- 30 Degree Helix
- Cutting Diameter Tolerance +.003/- .003
- Rough/Finish in One Operation
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Part Number	Diameter	Shank	LOC	LBS	OAL	No. of Flutes	EDP	AITIN EDP	AICrN EDP
KPACRN24-5	3/4	3/4	1	2	4-1/4	4	78105-00-W	78105-85-W	78105-70-W
KPACRN24-5A	3/4	3/4	1	3	5-1/4	4	78106-00-W	78106-85-W	78106-70-W
KPACRN32-7	1	1	1-1/4	2	4-1/2	4	78107-00-W	78107-85-W	78107-70-W
KPACRN32-7A	1	1	1-1/4	3	5-1/2	4	78108-00-W	78108-85-W	78108-70-W
KPACRN32-7B	1	1	1-1/4	4	6-1/2	4	78109-00-W	78109-85-W	78109-70-W
KPSCRN32-7	1	1	1-1/4	2	4-1/2	6	78110-00-W	78110-85-W	78110-70-W
KPSCRN32-7A	1	1	1-1/4	3	5-1/2	6	78111-00-W	78111-85-W	78111-70-W
KPSCRN32-7B	1	1	1-1/4	4	6-1/2	6	78112-00-W	78112-85-W	78112-70-W
KPSCRN40-8	1-1/4	1-1/4	1-1/2	2	4-1/2	6	78113-00-W	78113-85-W	78113-70-W
KPSCRN40-8A	1-1/4	1-1/4	1-1/2	3	5-1/2	6	78114-00-W	78114-85-W	78114-70-W
KPSCRN40-8B	1-1/4	1-1/4	1-1/2	4	6-1/2	6	78115-00-W	78115-85-W	78115-70-W
KPSCRN40-8D	1-1/4	1-1/4	1-1/2	6	8-1/2	6	78119-00-W	78119-85-W	78119-70-W
KPSCRN48-8	1-1/2	1-1/4	1-1/2	2	4-1/2	6	78120-00-W	78120-85-W	78120-70-W
KPSCRN48-8A	1-1/2	1-1/4	1-1/2	3	5-1/2	6	78121-00-W	78121-85-W	78121-70-W
KPSCRN48-8B	1-1/2	1-1/4	1-1/2	4	6-1/2	6	78122-00-W	78122-85-W	78122-70-W
KPSCRN48-8C	1-1/2	1-1/4	1-1/2	5	7-1/2	6	78123-00-W	78123-85-W	78123-70-W
KPSCRN48-8D	1-1/2	1-1/4	1-1/2	6	8-1/2	6	78127-00-W	78127-85-W	78127-70-W
KPSCRN64-10A	2	2	2-1/4	3	6-3/4	6	78128-00-W	78128-85-W	78128-70-W
KPSCRN64-10B	2	2	2-1/4	4	7-3/4	6	78129-00-W	78129-85-W	78129-70-W
KPSCRN64-10C	2	2	2-1/4	5	8-3/4	6	78130-00-W	78130-85-W	78130-70-W
KPSCRN64-10D	2	2	2-1/4	6	9-3/4	6	78131-00-W	78131-85-W	78131-70-W

\*LBS: Length Below Shank

**Powdered Metal available upon request.**



We have consolidated the Brubaker Starchip and Fastcut Ruff-N-Touch series into our Ti35. This is a multi-flute, 35 degree helix end mill aimed squarely at roughing or roughing/finishing in titanium and stainless steel alloys. This is a tried and true Aerospace workhorse made to NAS specifications. All tools are supplied as center cutting.

## Cobalt Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 15XX	40XX, 41XX, 86XX, Series	316L	416, 440C	15-5PH, AM-XX Series	Gray	Ductile	A286, Haynes	Pure	Cast/Wrought Alpha - Beta
	Cobalt SFM	60 - 120	30 - 100	30 - 90	50 - 110	30 - 70	60 - 160	40 - 80	5 - 35	55 - 100	40 - 90
1/2"	S	0.0025	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0015	0.0025	0.0020
	HP	0.0030	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0015	0.0030	0.0023
	LP	0.0037	0.0035	0.0035	0.0035	0.0035	0.0045	0.0040	0.0035	0.0037	0.0035
5/8"	S	0.0033	0.0024	0.0027	0.0027	0.0024	0.0024	0.0027	0.0017	0.0032	0.0025
	HP	0.0038	0.0025	0.0031	0.0031	0.0025	0.0025	0.0032	0.0019	0.0037	0.0029
	LP	0.0046	0.0044	0.0044	0.0044	0.0044	0.0057	0.0049	0.0044	0.0046	0.0044
3/4"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
7/8"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
1"	S	0.0054	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0027	0.0054	0.0041
	HP	0.0060	0.0040	0.0050	0.0050	0.0040	0.0040	0.0050	0.0030	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0074	0.0070
1-1/4"	S	0.0069	0.0046	0.0058	0.0058	0.0046	0.0046	0.0058	0.0035	0.0069	0.0053
	HP	0.0075	0.0050	0.0063	0.0063	0.0050	0.0050	0.0063	0.0038	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0093	0.0088
1-1/2"	S	0.0081	0.0054	0.0068	0.0068	0.0054	0.0054	0.0068	0.0041	0.0081	0.0062
	HP	0.0090	0.0060	0.0075	0.0075	0.0060	0.0060	0.0075	0.0045	0.0090	0.0069
	LP	0.0111	0.0105	0.0105	0.0105	0.0105	0.0135	0.0120	0.0105	0.0111	0.0105
2"	S	0.0108	0.0072	0.0090	0.0090	0.0072	0.0072	0.0090	0.0054	0.0108	0.0083
	HP	0.0120	0.0080	0.0100	0.0100	0.0080	0.0080	0.0100	0.0060	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0148	0.0140

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to 2.0 x Diameter  
Radial width >.3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to 3.0 x Diameter  
Radial width >.05 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your tools, call us toll free at:  
Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.

# Ti35-Rougher/Finisher

# Cobalt

- NAS 986 Type 46 and 66
- M42 Cobalt
- 35 Degree Helix
- Cutting Diameter Tolerance +.003/- .000
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	OAL	No. of Flutes	EDP	AITiN EDP	AICrN EDP
1/2	1/2	1-1/4	3-1/4	4	87228-00	87228-85	87228-70
1/2	1/2	2	4	4	87630-00	87630-85	87630-70
1/2	1/2	3	5	4	87831-00	87831-85	87831-70
5/8	5/8	1-5/8	3-3/4	4	87236-00	87236-85	87236-70
5/8	5/8	3	5-1/8	4	87437-00	87437-85	87437-70
5/8	5/8	2-1/2	4-5/8	4	87638-00	87638-85	87638-70
5/8	5/8	4	6-1/8	4	87839-00	87839-85	87839-70
3/4	3/4	1-5/8	3-7/8	4	87245-00	87245-85	87245-70
3/4	3/4	1-5/8	3-7/8	6	87246-00	87246-85	87246-70
3/4	3/4	3	5-1/4	4	87647-00	87647-85	87647-70
3/4	3/4	3	5-1/4	6	87648-00	87648-85	87648-70
3/4	3/4	4	6-1/4	4	87847-00	87847-85	87847-70
3/4	3/4	4	6-1/4	6	87848-00	87848-85	87848-70
7/8	7/8	1-7/8	4-1/8	4	87254-00	87254-85	87254-70
7/8	7/8	3-1/2	5-3/4	4	87656-00	87656-85	87656-70
1	1	2	4-1/2	4	87266-00	87266-85	87266-70
1	1	2	4-1/2	6	87267-00	87267-85	87267-70
1	1	3	5-1/2	4	87467-00	87467-85	87467-70
1	1	3	5-1/2	6	87468-00	87468-85	87468-70
1	1	4	6-1/2	4	87668-00	87668-85	87668-70
1	1	4	6-1/2	6	87669-00	87669-85	87669-70
1	1	6	8-1/2	4	87868-00	87868-85	87868-70
1	1	6	8-1/2	6	87869-00	87869-85	87869-70
1-1/4	1-1/4	2	4-1/2	6	87275-00	87275-85	87275-70
1-1/4	1-1/4	3	5-1/2	6	87476-00	87476-85	87476-70
1-1/4	1-1/4	4	6-1/2	6	87677-00	87677-85	87677-70
1-1/4	1-1/4	6	8-1/2	6	87878-00	87878-85	87878-70
1-1/2	1-1/4	2	4-1/2	6	87283-00	87283-85	87283-70
1-1/2	1-1/4	3	5-1/2	6	87484-00	87484-85	87484-70
1-1/2	1-1/4	4	6-1/2	6	87685-00	87685-85	87685-70
1-1/2	1-1/4	6	8-1/2	6	87886-00	87886-85	87886-70
2	1-1/4	2	4-1/2	6	87292-00	87292-85	87292-70
2	2	2	5-3/4	6	87296-00	87296-85	87296-70
2	2	3	6-3/4	6	87497-00	87497-85	87497-70
2	2	4	7-3/4	6	87698-00	87698-85	87698-70
2	2	6	9-3/4	6	87899-00	87899-85	87899-70

To order Brubaker brand tools, please take base part number and add a "-B" at the end of the number.

**Example**     **Brubaker Brand Tool**  
77800-00     77800-00-B

To order Fastcut brand tools, please take base part number and add a "-F" at the end of the number.

**Example**     **Fastcut Brand Tool**  
77800-00     77800-00-F



We have consolidated our Brubaker Starchip III and Fastcut Rough-N-Touch III series into the Ni30. The Ni30 is a multi-flute, 30 degree helix, heavy core end mill intended for roughing and rough finishing in nickel based and high temperature alloys. The Ni30 is manufactured to NAS specifications. All tools are supplied as center cutting.

## Cobalt Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 15XX	40XX, 41XX, 86XX, Series	316L	416, 440C	15-5PH, AM-XX Series	Gray	Ductile	A286, Haynes	Pure	Cast/Wrought Alpha - Beta
Cobalt SFM		60 - 120	30 - 100	30 - 90	50 - 110	30 - 70	60 - 160	40 - 80	5 - 35	55 - 100	40 - 90
1/2"	S	0.0025	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0015	0.0025	0.0020
	HP	0.0030	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0015	0.0030	0.0023
	LP	0.0037	0.0035	0.0035	0.0035	0.0035	0.0045	0.0040	0.0035	0.0037	0.0035
5/8"	S	0.0033	0.0024	0.0027	0.0027	0.0024	0.0024	0.0027	0.0017	0.0032	0.0025
	HP	0.0038	0.0025	0.0031	0.0031	0.0025	0.0025	0.0032	0.0019	0.0037	0.0029
	LP	0.0046	0.0044	0.0044	0.0044	0.0044	0.0057	0.0049	0.0044	0.0046	0.0044
3/4"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
7/8"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
1"	S	0.0054	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0027	0.0054	0.0041
	HP	0.0060	0.0040	0.0050	0.0050	0.0040	0.0040	0.0050	0.0030	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0074	0.0070
1-1/4"	S	0.0069	0.0046	0.0058	0.0058	0.0046	0.0046	0.0058	0.0035	0.0069	0.0053
	HP	0.0075	0.0050	0.0063	0.0063	0.0050	0.0050	0.0063	0.0038	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0093	0.0088
1-1/2"	S	0.0081	0.0054	0.0068	0.0068	0.0054	0.0054	0.0068	0.0041	0.0081	0.0062
	HP	0.0090	0.0060	0.0075	0.0075	0.0060	0.0060	0.0075	0.0045	0.0090	0.0069
	LP	0.0111	0.0105	0.0105	0.0105	0.0105	0.0135	0.0120	0.0105	0.0111	0.0105
2"	S	0.0108	0.0072	0.0090	0.0090	0.0072	0.0072	0.0090	0.0054	0.0108	0.0083
	HP	0.0120	0.0080	0.0100	0.0100	0.0080	0.0080	0.0100	0.0060	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0148	0.0140

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to 2.0 x Diameter  
Radial width >.3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to 3.0 x Diameter  
Radial width >.05 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your tools, call us toll free at:  
Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.

- NAS 986 Type 45, 65 and 85
- M42 Cobalt
- 30 Degree Right Hand Helix, Right Hand Cut
- Cutting Diameter Tolerance +.003/-.000
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	OAL	No. of Flutes	EDP	AITiN EDP	AICrN EDP
1/2	1/2	1-1/4	3-1/4	4	89228-00	89228-85	89228-70
1/2	1/2	2	4	4	89630-00	89630-85	89630-70
5/8	5/8	1-5/8	3-3/4	4	89236-00	89236-85	89236-70
5/8	5/8	2-1/2	4-5/8	4	89638-00	89638-85	89638-70
3/4	3/4	1-5/8	3-7/8	4	89245-00	89245-85	89245-70
3/4	3/4	3	5-1/4	4	89647-00	89647-85	89647-70
7/8	7/8	1-7/8	4-1/8	4	89254-00	89254-85	89254-70
7/8	7/8	3-1/2	5-3/4	4	89656-00	89656-85	89656-70
1	1	2	4-1/2	6	89266-00	89266-85	89266-70
1	1	3	5-1/2	6	89467-00	89467-85	89467-70
1	1	4	6-1/2	6	89668-00	89668-85	89668-70
1-1/4	1-1/4	2	4-1/2	6	89275-00	89275-85	89275-70
1-1/4	1-1/4	3	5-1/2	6	89476-00	89476-85	89476-70
1-1/4	1-1/4	4	6-1/2	6	89677-00	89677-85	89677-70
1-1/2	1-1/4	2	4-1/2	8	89283-00	89283-85	89283-70
1-1/2	1-1/4	3	5-1/2	8	89484-00	89484-85	89484-70
1-1/2	1-1/4	4	6-1/2	8	89685-00	89685-85	89685-70
2	2	2	5-3/4	8	89296-00	89296-85	89296-70
2	2	3	6-3/4	8	89497-00	89497-85	89497-70
2	2	4	7-3/4	8	89698-00	89698-85	89698-70

To order Brubaker brand tools, please take base part number and add a "-B" at the end of the number.

**Example**     **Brubaker Brand Tool**  
77800-00     77800-00-B

To order Fastcut brand tools, please take base part number and add a "-F" at the end of the number.

**Example**     **Fastcut Brand Tool**  
77800-00     77800-00-F



Our WM series end mills were designed specifically for finishing in titanium and exotic ferrous alloys. These end mills have a 45 degree helix for enhanced shearing action and a powdered metal substrate for superior wear resistance and tool life.

## Powdered Metal Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 11XX, 13XX, 15XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 312, 316, 316L	416, 420, 420F, 430F, 440C	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Cobalt/Nickel Base Stellite, Haynes Inconel, Monel, Rene	Iron Base Incoloy A-286	Pure	Cast/Wrought 6AL4V, ASTM 6AI-25N-4Zr-2Mo-Si
		PM SFM	70 - 140	30 - 100	40 - 100	60 - 120	40 - 80	70 - 180	50 - 90	5 - 40	5 - 35	70 - 120
1/2"	HP	0.0030	0.0020	0.0025	0.0020	0.0020	0.0020	0.0025	0.0015	0.0020	0.0030	0.0023
	LP	0.0037	0.0035	0.0035	0.0035	0.0035	0.0045	0.0040	0.0035	0.0035	0.0037	0.0035
3/4"	HP	0.0043	0.0029	0.0029	0.0029	0.0029	0.0029	0.0036	0.0021	0.0029	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0050	0.0053	0.0050
1"	HP	0.0060	0.0040	0.0040	0.0040	0.0040	0.0040	0.0050	0.0030	0.0040	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0070	0.0074	0.0070
1-1/4"	HP	0.0075	0.0050	0.0050	0.0050	0.0050	0.0050	0.0063	0.0038	0.0050	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0088	0.0093	0.0088
2"	HP	0.0120	0.0080	0.0080	0.0080	0.0080	0.0080	0.0100	0.0060	0.0080	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0140	0.0148	0.0140

**HP = HEAVY PERIPHERAL**

Axial Depth up to 1.5 x Diameter  
Radial width >.3 x Diameter

**LP = LIGHT PERIPHERAL**

Axial Depth up to 2.0 x Diameter  
Radial width >.05 x Diameter

For maximum Performance, ALTiN Coating is Recommended  
For Coated End Mills, Increase SFM by 20%-35%.

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your Weldon tools, call us toll free at 800.622.7742 and ask to speak to our Technical Support Department.





- Powdered Metal Substrate
- 45 Degree Helix
- Stocked in Square Ends and Radii
- Full Eccentric Grind
- All Tools are Supplied with Plain Round Shank

- Available Upon Request:
  - Additional Radii
  - Whistle Notch
  - Additional Coatings

Part Number	Diameter	Shank	LOC	OAL	No. of Flutes	EDP	AITIN	AITiN w/.060	AITiN w/.090	AITiN w/.120	AITiN w/.190	AITiN w/.250
WM50500	1/2	1/2	1-1/4	3-1/4	5	57800-00-W	57800-85-W	57802-85-W	57803-85-W			
WML50500	1/2	1/2	2	4	5	57804-00-W	57804-85-W	57806-85-W	57807-85-W			
WM50750	3/4	3/4	1-5/8	3-7/8	5	57808-00-W	57808-85-W			57810-85-W	57811-85-W	
WMM50750	3/4	3/4	2-1/4	4-1/2	5	57812-00-W	57812-85-W			57814-85-W	57815-85-W	
WML50750	3/4	3/4	3	5-1/4	5	57816-00-W	57816-85-W			57818-85-W	57819-85-W	
WM51000	1	1	2	4-1/2	5	57820-00-W	57820-85-W			57822-85-W	57823-85-W	
WMM51000	1	1	3	5-1/2	5	57824-00-W	57824-85-W			57826-85-W	57827-85-W	
WML51000	1	1	4	6-1/2	5	57828-00-W	57828-85-W			57830-85-W	57831-85-W	
WM71250	1-1/4	1-1/4	2	4-1/2	7	57832-00-W	57832-85-W			57834-85-W	57835-85-W	
WMM71250	1-1/4	1-1/4	3	5-1/2	7	57836-00-W	57836-85-W			57838-85-W	57839-85-W	
WML71250	1-1/4	1-1/4	4	6-1/2	7	57840-00-W	57840-85-W			57842-85-W	57843-85-W	
WMX71250	1-1/4	1-1/4	6	8-1/2	7	57844-00-W	57844-85-W			57846-85-W	57847-85-W	
WM92000	2	2	2	5-3/4	9	57848-00-W	57848-85-W			57850-85-W		57851-85-W
WMM92000	2	2	3	6-3/4	9	57852-00-W	57852-85-W			57854-85-W		57855-85-W
WML92000	2	2	4	7-3/4	9	57856-00-W	57856-85-W			57858-85-W		57859-85-W
WMX92000	2	2	6	9-3/4	9	57860-00-W	57860-85-W			57862-85-W		57863-85-W



These end mills were formerly known as Brubaker SST Series. Our TiF35 series are intended to provide an outstanding finish in titanium and other exotic ferrous alloys. They are manufactured to NAS 986 type 46 and 66 specifications. All tools are supplied as center cutting.

## Cobalt Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 15XX	40XX, 41XX, 86XX, Series	316L	416, 440C	15-5PH, AM-XX Series	Gray	Ductile	A286, Haynes	Pure	Cast/Wrought Alpha - Beta
Cobalt SFM		60 - 120	30 - 100	30 - 90	50 - 110	30 - 70	60 - 160	40 - 80	5 - 35	55 - 100	40 - 90
3/8"	S	0.0019	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0011	0.0019	0.0015
	HP	0.0023	0.0015	0.0019	0.0019	0.0015	0.0015	0.0019	0.0011	0.0023	0.0017
	LP	0.0028	0.0026	0.0026	0.0026	0.0026	0.0034	0.0030	0.0026	0.0028	0.0026
7/16"	S	0.0019	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0011	0.0019	0.0015
	HP	0.0023	0.0015	0.0019	0.0019	0.0015	0.0015	0.0019	0.0011	0.0023	0.0017
	LP	0.0028	0.0026	0.0026	0.0026	0.0026	0.0034	0.0030	0.0026	0.0028	0.0026
1/2"	S	0.0025	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0015	0.0025	0.0020
	HP	0.0030	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0015	0.0030	0.0023
	LP	0.0037	0.0035	0.0035	0.0035	0.0035	0.0045	0.0040	0.0035	0.0037	0.0035
5/8"	S	0.0033	0.0024	0.0027	0.0027	0.0024	0.0024	0.0027	0.0017	0.0032	0.0025
	HP	0.0038	0.0025	0.0031	0.0031	0.0025	0.0025	0.0032	0.0019	0.0037	0.0029
	LP	0.0046	0.0044	0.0044	0.0044	0.0044	0.0057	0.0049	0.0044	0.0046	0.0044
3/4"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
7/8"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
1"	S	0.0054	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0027	0.0054	0.0041
	HP	0.0060	0.0040	0.0050	0.0050	0.0040	0.0040	0.0050	0.0030	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0074	0.0070
1-1/4"	S	0.0069	0.0046	0.0058	0.0058	0.0046	0.0046	0.0058	0.0035	0.0069	0.0053
	HP	0.0075	0.0050	0.0063	0.0063	0.0050	0.0050	0.0063	0.0038	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0093	0.0088
1-1/2"	S	0.0081	0.0054	0.0068	0.0068	0.0054	0.0054	0.0068	0.0041	0.0081	0.0062
	HP	0.0090	0.0060	0.0075	0.0075	0.0060	0.0060	0.0075	0.0045	0.0090	0.0069
	LP	0.0111	0.0105	0.0105	0.0105	0.0105	0.0135	0.0120	0.0105	0.0111	0.0105
2"	S	0.0108	0.0072	0.0090	0.0090	0.0072	0.0072	0.0090	0.0054	0.0108	0.0083
	HP	0.0120	0.0080	0.0100	0.0100	0.0080	0.0080	0.0100	0.0060	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0148	0.0140

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to 2.0 x Diameter  
Radial width >.3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to 3.0 x Diameter  
Radial width >.05 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your tools, call us toll free at:  
Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.

# TiF35 Finishing End Mill

**Cobalt**

- M42 Cobalt
- 35 Degree Helix
- Cutting Diameter Tolerance +.003/- .000
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	OAL	No. of Flutes	EDP	AITIN EDP	AICrN EDP
1/8	3/8	3/8	2-5/16	4	85000-00	85000-85	85000-70
3/16	3/8	1/2	2-3/8	4	85002-00	85002-85	85002-70
1/4	3/8	5/8	2-7/16	4	85004-00	85004-85	85004-70
5/16	3/8	3/4	2-1/2	4	85009-00	85009-85	85009-70
3/8	3/8	3/4	2-1/2	4	85014-00	85014-85	85014-70
3/8	3/8	1-1/2	3-1/4	4	85416-00	85416-85	85416-70
3/8	3/8	2-1/2	4-1/4	4	85617-00	85617-85	85617-70
7/16	3/8	1	2-11/16	4	85020-00	85020-85	85020-70
1/2	1/2	1-1/4	3-1/4	4	85028-00	85028-85	85028-70
1/2	1/2	2	4	4	85430-00	85430-85	85430-70
1/2	1/2	3	5	4	85631-00	85631-85	85631-70
5/8	5/8	1-5/8	3-3/4	4	85036-00	85036-85	85036-70
5/8	5/8	2-1/2	4-5/8	4	85438-00	85438-85	85438-70
5/8	5/8	3	5-1/8	4	85237-00	85237-85	85237-70
5/8	5/8	4	6-1/8	4	85639-00	85639-85	85639-70
3/4	3/4	1-5/8	3-7/8	4	85045-00	85045-85	85045-70
3/4	3/4	1-5/8	3-7/8	6	85046-00	85046-85	85046-70
3/4	3/4	3	5-1/4	4	85447-00	85447-85	85447-70
3/4	3/4	3	5-1/4	6	85448-00	85448-85	85448-70
3/4	3/4	4	6-1/4	4	85647-00	85647-85	85647-70
3/4	3/4	4	6-1/4	6	85648-00	85648-85	85648-70
7/8	7/8	1-7/8	4-1/8	4	85054-00	85054-85	85054-70
7/8	7/8	3-1/2	5-3/4	4	85456-00	85456-85	85456-70
1	1	2	4-1/2	4	85066-00	85066-85	85066-70
1	1	2	4-1/2	6	85067-00	85067-85	85067-70
1	1	3	5-1/2	4	85267-00	85267-85	85267-70
1	1	3	5-1/2	6	85268-00	85268-85	85268-70
1	1	4	6-1/2	4	85468-00	85468-85	85468-70
1	1	4	6-1/2	6	85469-00	85469-85	85469-70
1	1	6	8-1/2	4	85668-00	85668-85	85668-70
1	1	6	8-1/2	6	85669-00	85669-85	85669-70
1-1/4	1-1/4	2	4-1/2	6	85075-00	85075-85	85075-70
1-1/4	1-1/4	3	5-1/2	6	85276-00	85276-85	85276-70
1-1/4	1-1/4	4	6-1/2	6	85477-00	85477-85	85477-70
1-1/4	1-1/4	6	8-1/2	6	85678-00	85678-85	85678-70
1-1/2	1-1/4	2	4-1/2	6	85083-00	85083-85	85083-70
1-1/2	1-1/4	3	5-1/2	6	85284-00	85284-85	85284-70
1-1/2	1-1/4	4	6-1/2	6	85485-00	85485-85	85485-70
1-1/2	1-1/4	6	8-1/2	6	85686-00	85686-85	85686-70
2	1-1/4	2	4-1/2	6	85092-00	85092-85	85092-70
2	2	2	5-3/4	6	85096-00	85096-85	85096-70
2	2	3	6-3/4	6	85297-00	85297-85	85297-70
2	2	4	7-3/4	6	85498-00	85498-85	85498-70
2	2	6	9-3/4	6	85699-00	85699-85	85699-70

To order Brubaker brand tools, please take base part number and add a "-B" at the end of the number. **Example** 77800-00 **Brubaker Brand Tool** 77800-00-B

To order Fastcut brand tools, please take base part number and add a "-F" at the end of the number. **Example** 77800-00 **Fastcut Brand Tool** 77800-00-F



These end mills were formerly known as Brubaker SST Series. Our TiF35LH series are intended to provide an outstanding finish in titanium and other exotic ferrous alloys. They are manufactured to NAS 986 type 46 and 66 specifications. This is the left hand helix counterpart to our TiF35 series. All tools are supplied as center cutting.

## Cobalt Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 15XX	40XX, 41XX, 86XX, Series	316L	416, 440C	15-5PH, AM-XX Series	Gray	Ductile	A286, Haynes	Pure	Cast/Wrought Alpha - Beta
Cobalt SFM		60 - 120	30 - 100	30 - 90	50 - 110	30 - 70	60 - 160	40 - 80	5 - 35	55 - 100	40 - 90
1/2"	S	0.0025	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0015	0.0025	0.0020
	HP	0.0030	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0015	0.0030	0.0023
	LP	0.0037	0.0035	0.0035	0.0035	0.0035	0.0045	0.0040	0.0035	0.0037	0.0035
3/4"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
1"	S	0.0054	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0027	0.0054	0.0041
	HP	0.0060	0.0040	0.0050	0.0050	0.0040	0.0040	0.0050	0.0030	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0074	0.0070
1-1/4"	S	0.0069	0.0046	0.0058	0.0058	0.0046	0.0046	0.0058	0.0035	0.0069	0.0053
	HP	0.0075	0.0050	0.0063	0.0063	0.0050	0.0050	0.0063	0.0038	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0093	0.0088
1-1/2"	S	0.0081	0.0054	0.0068	0.0068	0.0054	0.0054	0.0068	0.0041	0.0081	0.0062
	HP	0.0090	0.0060	0.0075	0.0075	0.0060	0.0060	0.0075	0.0045	0.0090	0.0069
	LP	0.0111	0.0105	0.0105	0.0105	0.0105	0.0135	0.0120	0.0105	0.0111	0.0105
2"	S	0.0108	0.0072	0.0090	0.0090	0.0072	0.0072	0.0090	0.0054	0.0108	0.0083
	HP	0.0120	0.0080	0.0100	0.0100	0.0080	0.0080	0.0100	0.0060	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0148	0.0140

**S = SLOTTING**

Axial Depth up to 1.0 x Diameter

**HP = HEAVY PERIPHERAL**

Axial Depth up to 2.0 x Diameter  
Radial width >.3 x Diameter

**LP = LIGHT PERIPHERAL**

Axial Depth up to 3.0 x Diameter  
Radial width >.05 x Diameter

**CALCULATIONS FOR SPEED**

RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**

IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your tools, call us toll free at:  
Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.

# TiF35 LH Finishing End Mill, Left Hand

# Cobalt

- M42 Cobalt
- 35 Degree Helix
- Cutting Diameter Tolerance +.003/- .000
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	OAL	No. of Flutes	EDP	AITiN EDP	AICrN EDP
1/2	1/2	1-1/4	3-1/4	4	85128-00	85128-85	85128-70
3/4	3/4	1-5/8	3-7/8	4	85145-00	85145-85	85145-70
3/4	3/4	1-5/8	3-7/8	6	85146-00	85146-85	85146-70
3/4	3/4	3	5-1/4	4	85547-00	85547-85	85547-70
3/4	3/4	3	5-1/4	6	85548-00	85548-85	85548-70
3/4	3/4	4	6-1/4	4	85747-00	85747-85	85747-70
3/4	3/4	4	6-1/4	6	85748-00	85748-85	85748-70
1	1	2	4-1/2	4	85166-00	85166-85	85166-70
1	1	2	4-1/2	6	85167-00	85167-85	85167-70
1	1	3	5-1/2	4	85367-00	85367-85	85367-70
1	1	3	5-1/2	6	85368-00	85368-85	85368-70
1	1	4	6-1/2	4	85568-00	85568-85	85568-70
1	1	4	6-1/2	6	85569-00	85569-85	85569-70
1	1	6	8-1/2	4	85768-00	85768-85	85768-70
1	1	6	8-1/2	6	85769-00	85769-85	85769-70
1-1/4	1-1/4	2	4-1/2	6	85175-00	85175-85	85175-70
1-1/4	1-1/4	3	5-1/2	6	85376-00	85376-85	85376-70
1-1/4	1-1/4	4	6-1/2	6	85577-00	85577-85	85577-70
1-1/4	1-1/4	6	8-1/2	6	85778-00	85778-85	85778-70
1-1/2	1-1/4	2	4-1/2	6	85183-00	85183-85	85183-70
1-1/2	1-1/4	3	5-1/2	6	85384-00	85384-85	85384-70
1-1/2	1-1/4	4	6-1/2	6	85585-00	85585-85	85585-70
1-1/2	1-1/4	6	8-1/2	6	85786-00	85786-85	85786-70
2	2	2	5-3/4	6	85196-00	85196-85	85196-70
2	2	3	6-3/4	6	85397-00	85397-85	85397-70
2	2	4	7-3/4	6	85598-00	85598-85	85598-70

To order Brubaker brand tools, please take base part number and add a “-B” at the end of the number.

**Example**     **Brubaker Brand Tool**  
77800-00     77800-00-B

To order Fastcut brand tools, please take base part number and add a “-F” at the end of the number.

**Example**     **Fastcut Brand Tool**  
77800-00     77800-00-F



Formerly known as the Brubaker Gemini series, these end mills conform to NAS 986 Type 45, 65 and 85 specifications. These end mills are designed primarily to machine nickel based and high temperature alloys. All tools are supplied as center cutting.

## Cobalt Speeds and Feeds Chart for Ferrous Materials

Materials		Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
Diameter	Description	10XX, 15XX	40XX, 41XX, 86XX, Series	316L	416, 440C	15-5PH, AM-XX Series	Gray	Ductile	A286, Haynes	Pure	Cast/Wrought Alpha - Beta
Cobalt SFM		60 - 120	30 - 100	30 - 90	50 - 110	30 - 70	60 - 160	40 - 80	5 - 35	55 - 100	40 - 90
1/2"	S	0.0025	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0015	0.0025	0.0020
	HP	0.0030	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0015	0.0030	0.0023
	LP	0.0037	0.0035	0.0035	0.0035	0.0035	0.0045	0.0040	0.0035	0.0037	0.0035
5/8"	S	0.0033	0.0024	0.0027	0.0027	0.0024	0.0024	0.0027	0.0017	0.0032	0.0025
	HP	0.0038	0.0025	0.0031	0.0031	0.0025	0.0025	0.0032	0.0019	0.0037	0.0029
	LP	0.0046	0.0044	0.0044	0.0044	0.0044	0.0057	0.0049	0.0044	0.0046	0.0044
3/4"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
7/8"	S	0.0038	0.0026	0.0032	0.0032	0.0026	0.0026	0.0032	0.0019	0.0038	0.0029
	HP	0.0043	0.0029	0.0036	0.0036	0.0029	0.0029	0.0036	0.0021	0.0043	0.0033
	LP	0.0053	0.0050	0.0050	0.0050	0.0050	0.0064	0.0057	0.0050	0.0053	0.0050
1"	S	0.0054	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0027	0.0054	0.0041
	HP	0.0060	0.0040	0.0050	0.0050	0.0040	0.0040	0.0050	0.0030	0.0060	0.0046
	LP	0.0074	0.0070	0.0070	0.0070	0.0070	0.0090	0.0080	0.0070	0.0074	0.0070
1-1/4"	S	0.0069	0.0046	0.0058	0.0058	0.0046	0.0046	0.0058	0.0035	0.0069	0.0053
	HP	0.0075	0.0050	0.0063	0.0063	0.0050	0.0050	0.0063	0.0038	0.0075	0.0058
	LP	0.0093	0.0088	0.0088	0.0088	0.0088	0.0113	0.0100	0.0088	0.0093	0.0088
1-1/2"	S	0.0081	0.0054	0.0068	0.0068	0.0054	0.0054	0.0068	0.0041	0.0081	0.0062
	HP	0.0090	0.0060	0.0075	0.0075	0.0060	0.0060	0.0075	0.0045	0.0090	0.0069
	LP	0.0111	0.0105	0.0105	0.0105	0.0105	0.0135	0.0120	0.0105	0.0111	0.0105
2"	S	0.0108	0.0072	0.0090	0.0090	0.0072	0.0072	0.0090	0.0054	0.0108	0.0083
	HP	0.0120	0.0080	0.0100	0.0100	0.0080	0.0080	0.0100	0.0060	0.0120	0.0092
	LP	0.0148	0.0140	0.0140	0.0140	0.0140	0.0180	0.0160	0.0140	0.0148	0.0140

**S = SLOTTING**  
Axial Depth up to  
1.0 x Diameter

**HP = HEAVY PERIPHERAL**  
Axial Depth up to 2.0 x Diameter  
Radial width >.3 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to 3.0 x Diameter  
Radial width >.05 x Diameter

**CALCULATIONS FOR SPEED**  
RPM = (3.82 x SFM) / DIA.  
SFM = (RPM x DIA.) / 3.82

**CALCULATIONS FOR FEED**  
IPM = # of FLUTES x FPT x RPM  
FPT = IPM / (RPM x # of Flutes)

**Note!** When using coated end mills increase SFM by 20%-35%.

For additional support and for maximum optimization of your tools, call us toll free at:  
Brubaker 800.522.8665, at Fastcut 800.682.8832, and ask to speak to our Technical Support Department.

- M42 Cobalt
- 30 Degree Helix
- Cutting Diameter Tolerance +.003/- .000
- Profile, Slot and Pocket
- Two Screw Drive on 7/8" Shank and Larger

- Available Upon Request:
  - Radius Ends
  - Whistle Notch
  - Additional Coatings

Diameter	Shank	LOC	OAL	No. of Flutes	EDP	AITiN EDP	AICrN EDP
1/2	1/2	1-1/4	3-1/4	4	85828-00	85828-85	85828-70
1/2	1/2	2	4	4	86030-00	86030-85	86030-70
5/8	5/8	1-5/8	3-3/4	4	85836-00	85836-85	85836-70
5/8	5/8	2-1/2	4-5/8	4	86038-00	86038-85	86038-70
3/4	3/4	1-5/8	3-7/8	4	85845-00	85845-85	85845-70
3/4	3/4	3	5-1/4	4	86047-00	86047-85	86047-70
7/8	7/8	1-7/8	4-1/8	4	85854-00	85854-85	85854-70
7/8	7/8	3-1/2	5-3/4	4	86056-00	86056-85	86056-70
1	1	2	4-1/2	6	85866-00	85866-85	85866-70
1	1	3	5-1/2	6	85967-00	85967-85	85967-70
1	1	4	6-1/2	6	86068-00	86068-85	86068-70
1-1/4	1-1/4	2	4-1/2	6	85875-00	85875-85	85875-70
1-1/4	1-1/4	3	5-1/2	6	85976-00	85976-85	85976-70
1-1/4	1-1/4	4	6-1/2	6	86077-00	86077-85	86077-70
1-1/2	1-1/4	2	4-1/2	8	85883-00	85883-85	85883-70
1-1/2	1-1/4	3	5-1/2	8	85984-00	85984-85	85984-70
1-1/2	1-1/4	4	6-1/2	8	86085-00	86085-85	86085-70
2	2	2	5-3/4	8	85896-00	85896-85	85896-70
2	2	3	6-3/4	8	85997-00	85997-85	85997-70
2	2	4	7-3/4	8	86098-00	86098-85	86098-70

To order Brubaker brand tools, please take base part number and add a "-B" at the end of the number.

**Example**     **Brubaker Brand Tool**  
77800-00     77800-00-B

To order Fastcut brand tools, please take base part number and add a "-F" at the end of the number.

**Example**     **Fastcut Brand Tool**  
77800-00     77800-00-F

# End Mills



## Titanium and Ferrous

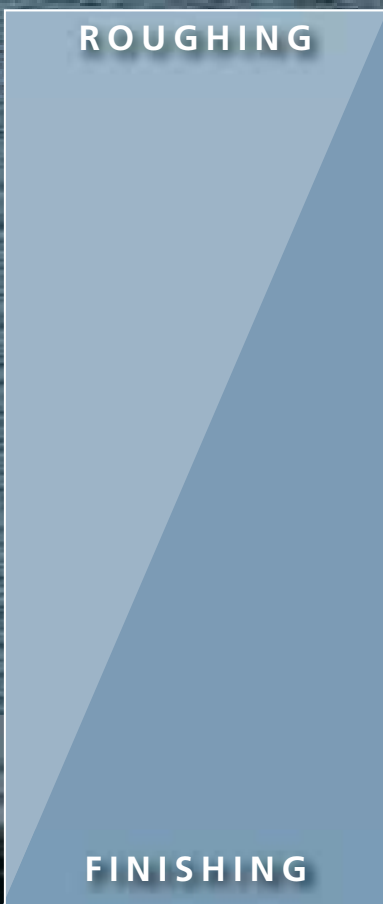
Highest quality, sub-micron  
grain, solid carbide tools for  
titanium and ferrous alloy  
Aerospace machining.



# Titanium

## and Ferrous Alloys

### Performance Carbide



SERIES	DESCRIPTION	PAGE
SSI-4	Four Flute, Variably Indexed, Roughing/Finishing, Profile, Slot and Pocket	64
SSI-4 Reduced Neck	Four Flute, Variably Indexed, Roughing/Finishing, Reduced Neck	70
SSI-4 BN	Four Flute, Ball Nose, Variably Indexed, Contour Milling	72
SSI-5	Five Flute, Variably Indexed, Roughing/Finishing, Profile, Slot and Pocket	74
SSI-5 Reduced Neck	Five Flute, Variably Indexed, Roughing/Finishing, Reduced Neck	80
MH	Multi-Flute, Finishing, Light Profile Cuts	82
TiM	Multi-Flute, Finishing, Profile Cuts, Extend Reach	88



The SSI-4 is the foundation on which our variably indexed family of ferrous rougher/finishers was built. The SSI-4 is a proven, performance driven, ferrous rougher that has the geometry to successfully venture into finishing territory as well. Now updated and expanded to over 70 stocked sizes, we hope that the SSI-4 will be the “go-to” tool for most of your ferrous alloy applications.

### Speed - Feed SSI-4 Flute

Diameter	Materials Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc SFM > 32Rc	200 - 450 100 - 250	150 - 300 80 - 200	150 - 350 80 - 200	200 - 450 100 - 250	80 - 250 90 - 125	250 - 450 130 - 300	120 - 350 80 - 140	70 - 120 40 - 90	140 - 220 90 - 160	140 - 250 90 - 160
1/8"	S	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0007	0.0010	0.0010
	HP	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0011	0.0014	0.0014
	LP	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0012	0.0016	0.0016
	F	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0021	0.0028	0.0028
1/4"	S	0.0014	0.0013	0.0014	0.0014	0.0013	0.0013	0.0013	0.0009	0.0014	0.0013
	HP	0.0016	0.0015	0.0016	0.0016	0.0015	0.0015	0.0015	0.0012	0.0016	0.0015
	LP	0.0019	0.0017	0.0019	0.0019	0.0017	0.0017	0.0017	0.0014	0.0019	0.0017
	F	0.0035	0.0031	0.0035	0.0035	0.0031	0.0031	0.0031	0.0025	0.0035	0.0031
5/16"	S	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0011	0.0013	0.0013
	HP	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016
	LP	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
	F	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033
3/8"	S	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0015	0.0018	0.0018
	HP	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021
	LP	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
	F	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045
1/2"	S	0.0028	0.0025	0.0025	0.0025	0.0024	0.0025	0.0025	0.0018	0.0028	0.0022
	HP	0.0033	0.0029	0.0029	0.0029	0.0027	0.0029	0.0029	0.0024	0.0033	0.0029
	LP	0.0037	0.0033	0.0033	0.0033	0.0030	0.0033	0.0033	0.0026	0.0037	0.0035
	F	0.0066	0.0059	0.0059	0.0059	0.0055	0.0059	0.0059	0.0047	0.0066	0.0063
5/8"	S	0.0030	0.0030	0.0030	0.0030	0.0028	0.0030	0.0030	0.0025	0.0030	0.0030
	HP	0.0051	0.0051	0.0051	0.0051	0.0047	0.0051	0.0051	0.0040	0.0051	0.0051
	LP	0.0079	0.0079	0.0079	0.0079	0.0065	0.0079	0.0079	0.0060	0.0079	0.0079
	F	0.0142	0.0142	0.0142	0.0142	0.0120	0.0142	0.0142	0.0108	0.0142	0.0142
3/4"	S	0.0038	0.0035	0.0035	0.0035	0.0030	0.0038	0.0038	0.0028	0.0030	0.0035
	HP	0.0049	0.0045	0.0045	0.0045	0.0038	0.0045	0.0045	0.0036	0.0038	0.0045
	LP	0.0055	0.0050	0.0050	0.0050	0.0042	0.0050	0.0050	0.0050	0.0042	0.0050
	F	0.0086	0.0089	0.0089	0.0089	0.0081	0.0089	0.0086	0.0080	0.0081	0.0086
1"	S	0.0045	0.0042	0.0042	0.0042	0.0050	0.0050	0.0050	0.0035	0.0056	0.0050
	HP	0.0055	0.0052	0.0052	0.0052	0.0059	0.0059	0.0059	0.0043	0.0066	0.0059
	LP	0.0065	0.0065	0.0065	0.0065	0.0065	0.0065	0.0065	0.0053	0.0073	0.0065
	F	0.0105	0.0105	0.0105	0.0105	0.0105	0.0105	0.0105	0.0085	0.0117	0.0105

**S = SLOTTING**

Axial Depth up to 1.0 x Diameter

**HP = HEAVY PERIPHERAL**

Axial Depth up to 1.5 x Diameter  
Radial width .5 x Diameter

**LP = LIGHT PERIPHERAL**

Axial Depth up to 2.0 x Diameter  
Radial width .15 x Diameter

**F = FINISH**

Axial Depth up to Length Of Cut  
2.5 X Diameter Reduce SFM by 20%  
Radial width .015 x Diameter

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- 4 Flute, Variably Indexed
- Roughing and Finishing in Titanium and Ferrous Alloys
- Performance Carbide
- Stocked in Square Ends and Radii

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  - Weldon Flats or Haimer Safe-Lock
  - Coolant Grooves and Through Holes

## SSI-4

Part Number	Dia.	Shank	LOC	OAL	Coating	Square				Radius Offering				
						0.000	0.010	0.020	0.030	0.060	0.090	0.120	0.156	0.190
SS-I-ST-40125	1/8	1/8	1/4	2	AlTiN	52523-85-D	51430-85-D		52390-85-D					
					AlCrN	52523-70-D	51430-70-D	52390-70-D						
SS-I-40125	1/8	1/8	1/2	2-1/2	AlTiN	52525-85-D	51434-85-D		52526-85-D					
					AlCrN	52525-70-D	51434-70-D	52526-70-D						
SS-I-ST-40156	5/32	3/16	3/16	2	AlTiN	52527-85-D	51438-85-D							
					AlCrN	52527-70-D	51438-70-D							
SS-I-ST-40156	5/32	3/16	5/16	2	AlTiN	52529-85-D	51442-85-D							
					AlCrN	52529-70-D	51442-70-D							
SS-I-40156	5/32	3/16	9/16	2-1/2	AlTiN	52531-85-D	52541-85-D							
					AlCrN	52531-70-D	52541-70-D							
SS-I-ST-40187	3/16	3/16	3/16	2	AlTiN	52533-85-D	51446-85-D		52534-85-D					
					AlCrN	52533-70-D	51446-70-D	52534-70-D						
SS-I-ST-40187	3/16	3/16	5/16	2	AlTiN	52535-85-D	51450-85-D		52536-85-D					
					AlCrN	52535-70-D	51450-70-D	52536-70-D						
SS-I-40187	3/16	3/16	9/16	2-1/2	AlTiN	52537-85-D	51454-85-D		52538-85-D					
					AlCrN	52537-70-D	51454-70-D	52538-70-D						
SS-I-ST-40218	7/32	1/4	3/8	2	AlTiN	52539-85-D		51458-85-D						
					AlCrN	52539-70-D	51458-70-D							
SS-I-STL-40218	7/32	1/4	1/2	2-1/2	AlTiN	52541-85-D		51462-85-D						
					AlCrN	52541-70-D	51462-70-D							
SS-I-40218	7/32	1/4	3/4	2-1/2	AlTiN	52544-85-D		51466-85-D						
					AlCrN	52544-70-D	51466-70-D							
SS-I-ST-40250	1/4	1/4	3/8	2	AlTiN	52546-85-D		51303-85-D	52547-85-D					
					AlCrN	52546-70-D	51303-70-D	52547-70-D						
SS-I-STL-40250	1/4	1/4	1/2	2-1/2	AlTiN	52548-85-D		51474-85-D	52549-85-D					
					AlCrN	52548-70-D	51474-70-D	52549-70-D						
SS-I-40250	1/4	1/4	3/4	2-1/2	AlTiN	52550-85-D		51336-85-D	52551-85-D					
					AlCrN	52550-70-D	51336-70-D	52551-70-D						
SS-I-M-40250	1/4	1/4	1-1/4	3	AlTiN	52552-85-D		52455-85-D	52554-85-D					
					AlCrN	52552-70-D	52455-70-D	52554-70-D						



SSI-4														
Part Number	Dia.	Shank	LOC	OAL	Coating	Square				Radius Offering				
						0.000	0.010	0.020	0.030	0.060	0.090	0.120	0.156	0.190
SS-I-ST-40281	9/32	5/16	7/16	2-1/2	AlTiN	52555-85-D		51479-85-D						
					AlCrN	52555-70-D	51479-70-D							
SS-I-40281	9/32	5/16	3/4	2-1/2	AlTiN	52558-85-D		51483-85-D						
					AlCrN	52558-70-D	51483-70-D							
SS-I-ST-40312	5/16	5/16	7/16	2-1/2	AlTiN	52560-85-D		51307-85-D	52562-85-D					
					AlCrN	52560-70-D	51307-70-D	52562-70-D						
SS-I-STL-40312	5/16	5/16	5/8	2-1/2	AlTiN	52563-85-D		51491-85-D	52564-85-D					
					AlCrN	52563-70-D	51491-70-D	52564-70-D						
SS-I-40312	5/16	5/16	13/16	2-1/2	AlTiN	52566-85-D		51341-85-D	52567-85-D					
					AlCrN	52566-70-D	51341-70-D	52567-70-D						
SS-I-M-40312	5/16	5/16	1-1/4	3	AlTiN	52568-85-D		52640-85-D	52570-85-D					
					AlCrN	52568-70-D	52640-70-D	52570-70-D						
SS-I-ST-40343	11/32	3/8	1/2	2-1/2	AlTiN	52572-85-D		51496-85-D						
					AlCrN	52572-70-D	51496-70-D							
SS-I-40343	11/32	3/8	1	2-1/2	AlTiN	52576-85-D		51500-85-D						
					AlCrN	52576-70-D	51500-70-D							
SS-I-M-40343	11/32	3/8	1-1/4	3	AlTiN	52579-85-D		52465-85-D						
					AlCrN	52579-70-D	52465-70-D							
SS-I-ST-40375	3/8	3/8	1/2	2-1/2	AlTiN	52582-85-D		51311-85-D	52583-85-D	52584-85-D				
					AlCrN	52582-70-D	51311-70-D	52583-70-D	52584-70-D					
SS-I-STL-40375	3/8	3/8	3/4	2-1/2	AlTiN	52585-85-D		51508-85-D	52586-85-D	52587-85-D				
					AlCrN	52585-70-D	51508-70-D	52586-70-D	52587-70-D					
SS-I-40375	3/8	3/8	1	2-1/2	AlTiN	52588-85-D		51346-85-D	52589-85-D	52590-85-D				
					AlCrN	52588-70-D	51346-70-D	52589-70-D	52590-70-D					
SS-I-M-40375	3/8	3/8	1-1/4	3	AlTiN	52591-85-D		51513-85-D	52592-85-D	52593-85-D				
					AlCrN	52591-70-D	51513-70-D	52592-70-D	52593-70-D					
SS-I-L-40375	3/8	3/8	1-1/2	4	AlTiN	52594-85-D		51517-85-D	52595-85-D	52596-85-D				
					AlCrN	52594-70-D	51517-70-D	52595-70-D	52596-70-D					
SS-I-X-40375	3/8	3/8	2	4	AlTiN	52597-85-D		51522-85-D	52598-85-D	52599-85-D				
					AlCrN	52597-70-D	51522-70-D	52598-70-D	52599-70-D					

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## SSI-4

Part Number	Dia.	Shank	LOC	OAL	Coating	Square				Radius Offering				
						0.000	0.010	0.020	0.030	0.060	0.090	0.120	0.156	0.190
SS-I-ST-40406	13/32	7/16	9/16	2-1/2	AlTiN	52600-85-D				52470-85-D				
					AlCrN	52600-70-D			52470-70-D					
SS-I-40406	13/32	7/16	1	2-3/4	AlTiN	52603-85-D				52475-85-D				
					AlCrN	52603-70-D			52475-70-D					
SS-I-ST-40437	7/16	7/16	9/16	2-1/2	AlTiN	52606-85-D		51315-85-D	52607-85-D	52608-85-D				
					AlCrN	52606-70-D		51315-70-D	52607-70-D	52608-70-D				
SS-I-40437	7/16	7/16	1	3	AlTiN	52609-85-D		51351-85-D	52610-85-D	52611-85-D				
					AlCrN	52609-70-D		51351-70-D	52610-70-D	52611-70-D				
SS-I-M-40437	7/16	7/16	1-1/4	3-1/2	AlTiN	52612-85-D		51533-85-D	52613-85-D	52614-85-D				
					AlCrN	52612-70-D		51533-70-D	52613-70-D	52614-70-D				
SS-I-ST-40469	15/32	1/2	5/8	3	AlTiN	52615-85-D		51538-85-D						
					AlCrN	52615-70-D		51538-70-D						
SS-I-40469	15/32	1/2	1	3	AlTiN	52619-85-D		51542-85-D						
					AlCrN	52619-70-D		51542-70-D						
SS-I-M-40469	15/32	1/2	1-1/4	3-1/2	AlTiN	52524-85-D		51547-85-D						
					AlCrN	52524-70-D		51547-70-D						
SS-I-ST-40500	1/2	1/2	5/8	3	AlTiN	52628-85-D			51319-85-D	52630-85-D	52631-85-D	52632-85-D		
					AlCrN	52628-70-D			51319-70-D	52630-70-D	52631-70-D	52632-70-D		
SS-I-STL-40500	1/2	1/2	1	3	AlTiN	52633-85-D			52480-85-D	52635-85-D	52636-85-D	52637-85-D		
					AlCrN	52633-70-D			52480-70-D	52635-70-D	52636-70-D	52637-70-D		
SS-I-40500	1/2	1/2	1-1/4	3	AlTiN	52638-85-D			51379-85-D	52640-85-D	52641-85-D	52642-85-D		
					AlCrN	52638-70-D			51379-70-D	52640-70-D	52641-70-D	52642-70-D		
SS-I-M-40500	1/2	1/2	1-3/4	4	AlTiN	52643-85-D			51581-85-D	52645-85-D	52646-85-D	52647-85-D		
					AlCrN	52643-70-D			51581-70-D	52645-70-D	52646-70-D	52647-70-D		
SS-I-L-40500	1/2	1/2	2	4	AlTiN	52648-85-D			51585-85-D	52650-85-D	52651-85-D	52652-85-D		
					AlCrN	52648-70-D			51585-70-D	52650-70-D	52651-70-D	52652-70-D		
SS-I-X-40500	1/2	1/2	3	5	AlTiN	52653-85-D			51589-85-D	52655-85-D	52656-85-D	52657-85-D		
					AlCrN	52653-70-D			51589-70-D	52655-70-D	52656-70-D	52657-70-D		



Part Number	Dia.	Shank	LOC	OAL	Coating	Square				Radius Offering				
						0.000	0.010	0.020	0.030	0.060	0.090	0.120	0.156	0.190
SS-I-ST-40625	5/8	5/8	3/4	3	AlTiN	52658-85-D			51324-85-D	52660-85-D	52661-85-D	52662-85-D		
					AlCrN	52658-70-D			51324-70-D	52660-70-D	52661-70-D	52662-70-D		
SS-I-STL-40625	5/8	5/8	1-1/4	3-1/2	AlTiN	52663-85-D			51593-85-D	52665-85-D	52666-85-D	52667-85-D		
					AlCrN	52663-70-D			51593-70-D	52665-70-D	52666-70-D	52667-70-D		
SS-I-40625	5/8	5/8	1-5/8	3-1/2	AlTiN	52668-85-D			51386-85-D	52670-85-D	52671-85-D	52672-85-D		
					AlCrN	52668-70-D			51386-70-D	52670-70-D	52671-70-D	52672-70-D		
SS-I-M-40625	5/8	5/8	2	4	AlTiN	52673-85-D			51598-85-D	52675-85-D	52676-85-D	52677-85-D		
					AlCrN	52673-70-D			51598-70-D	52675-70-D	52676-70-D	52677-70-D		
SS-I-L-40625	5/8	5/8	2-1/2	5	AlTiN	52678-85-D			52396-85-D	52680-85-D	52681-85-D	52682-85-D		
					AlCrN	52678-70-D			52396-70-D	52680-70-D	52681-70-D	52682-70-D		
SS-I-X-40625	5/8	5/8	3	5	AlTiN	52683-85-D			52400-85-D	52685-85-D	52686-85-D	52687-85-D		
					AlCrN	52683-70-D			52400-70-D	52685-70-D	52686-70-D	52687-70-D		
SS-I-ST-40750	3/4	3/4	1	3	AlTiN	52688-85-D			51330-85-D	52690-85-D	52691-85-D	52692-85-D	53176-85-D	53177-85-D
					AlCrN	52688-70-D			51330-70-D	52690-70-D	52691-70-D	52692-70-D	53176-70-D	53177-70-D
SS-I-40750	3/4	3/4	1-5/8	4	AlTiN	52693-85-D			52695-85-D	52696-85-D	52697-85-D	52845-85-D	52847-85-D	52849-85-D
					AlCrN	52693-70-D			52695-70-D	52696-70-D	52697-70-D	52845-70-D	52847-70-D	52849-70-D
SS-I-M-40750	3/4	3/4	2-1/4	5	AlTiN	52698-85-D			52406-85-D	52700-85-D	52701-85-D	52702-85-D	52860-85-D	52862-85-D
					AlCrN	52698-70-D			52406-70-D	52700-70-D	52701-70-D	52702-70-D	52860-70-D	52862-70-D
SS-I-L-40750	3/4	3/4	3	6	AlTiN	52703-85-D			52410-85-D	52705-85-D	52706-85-D	52707-85-D	53196-85-D	53197-85-D
					AlCrN	52703-70-D			52410-70-D	52705-70-D	52706-70-D	52707-70-D	53196-70-D	53197-70-D
SS-I-X-40750	3/4	3/4	4	6	AlTiN	52708-85-D			52414-85-D	52710-85-D	52711-85-D	52712-85-D	53304-85-D	53305-85-D
					AlCrN	52708-70-D			52414-70-D	52710-70-D	52711-70-D	52712-70-D	53304-70-D	53305-70-D
SS-I-ST-41000	1	1	1-1/4	4	AlTiN	52713-85-D			51335-85-D	52715-85-D	52716-85-D	52717-85-D	53312-85-D	53313-85-D
					AlCrN	52713-70-D			51335-70-D	52715-70-D	52716-70-D	52717-70-D	53312-70-D	53313-70-D
SS-I-41000	1	1	2	5	AlTiN	52718-85-D			51391-85-D	52721-85-D	52722-85-D	52723-85-D	53320-85-D	53321-85-D
					AlCrN	52718-70-D			51391-70-D	52721-70-D	52722-70-D	52723-70-D	53320-70-D	53321-70-D
SS-I-M-41000	1	1	2-5/8	6	AlTiN	52724-85-D			52422-85-D	52726-85-D	52727-85-D	52728-85-D	53328-85-D	53329-85-D
					AlCrN	52724-70-D			52422-70-D	52726-70-D	52727-70-D	52728-70-D	53328-70-D	53329-70-D

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.





The extended reach design incorporates the proven geometries of the SSI-4 to allow for deep pocket roughing and finishing. The necked shank on these tools minimizes deflection during deep-reach milling operations.

- 4 Flute, Variably Indexed
- Roughing and Finishing in Titanium and Ferrous Alloys
- Performance Carbide
- Stocked with C11

- Available Upon Request:
  - Additional Coatings
  - Weldon Flats or Haimer Safe-Lock
  - Coolant Grooves and Through Holes

## SSI-4, 3/8 SHANK OFFERING

C11-(AlTiN)					Radius Offering					
Part Number	Dia.	Shank	LOC	OAL	0.010	0.020	0.030	0.060	0.090	0.120
SS-I-ST-40125-375	1/8	3/8	1/4	2-1/2	53336-85-D					
SS-I-40125-375	1/8	3/8	1/2	2-1/2	53338-85-D					
SS-I-ST-40187-375	3/16	3/8	5/16	2-1/2	53339-85-D					
SS-I-40187-375	3/16	3/8	5/8	2-1/2	52439-85-D					
SS-I-ST-40250-375	1/4	3/8	3/8	2-1/2		53341-85-D				
SS-I-40250-375	1/4	3/8	3/4	2-1/2		52447-85-D				

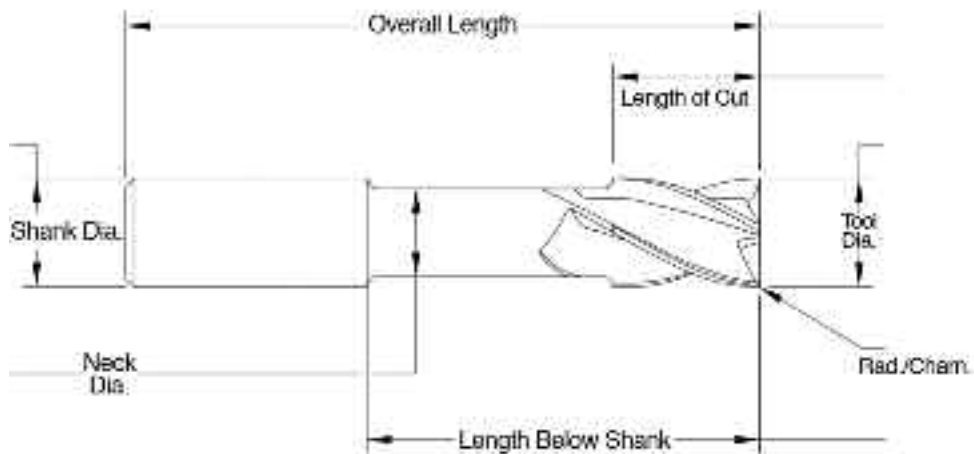


This extended reach design incorporates the proven geometries of the SSI-4 to allow for deep pocket roughing and finishing. The necked shank on these tools minimizes deflection during deep-reach milling operations.

## SSI-RN-4

C11-(AlTiN)

Part Number	Dia.	Shank	LOC	LBS	Neck Dia.	OAL	Radius Offering					
							0.010	0.020	0.030	0.060	0.090	0.120
SS-I-RN-40125	1/8	1/8	1/4	0.375	0.115	2-1/2	53344-85-D		53345-85-D			
SS-I-RN-M-40125	1/8	1/8	1/4	0.500	0.115	2-1/2	53346-85-D		53347-85-D			
SS-I-RN-L-40125	1/8	1/8	1/4	0.625	0.115	2-1/2	53348-85-D		53350-85-D			
SS-I-RN-40187	3/16	3/16	5/16	0.500	0.175	3	53351-85-D		53352-85-D			
SS-I-RN-M-40187	3/16	3/16	5/16	0.750	0.175	3	53354-85-D		53356-85-D			
SS-I-RN-M-40187	3/16	3/16	5/16	1.000	0.175	3	53358-85-D		53360-85-D			
SS-I-RN-40250	1/4	1/4	3/8	0.750	0.235	3		53362-85-D	53363-85-D	52872-85-D		
SS-I-RN-M-40250	1/4	1/4	3/8	1.125	0.235	4		53364-85-D	53367-85-D	53368-85-D		
SS-I-RN-L-40250	1/4	1/4	3/8	2.125	0.235	4		51398-85-D	53369-85-D	53370-85-D		
SS-I-RN-40375	3/8	3/8	1/2	1.125	0.355	4		53371-85-D	53372-85-D	53373-85-D	53374-85-D	
SS-I-RN-M-40375	3/8	3/8	1/2	2.125	0.355	4		53375-85-D	53376-85-D	53377-85-D	53378-85-D	
SS-I-RN-L-40375	3/8	3/8	1/2	3.125	0.355	6		53379-85-D	53380-85-D	53381-85-D	53382-85-D	
SS-I-RN-X-40375	3/8	3/8	1/2	4.125	0.355	6		53383-85-D	53384-85-D	53385-85-D	53386-85-D	



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- 4 Flute, Variably Indexed
- Roughing and Finishing in Titanium and Ferrous Alloys
- Performance Carbide
- Stocked in Square Ends and Radii

- Available Upon Request:
  - Additional Coatings
  - Weldon Flats or Haimer Safe-Lock
  - Coolant Grooves and Through Holes

## SSI-RN-4

### C11-(AlTiN)

### Radius Offering

Part Number	Dia.	Shank	LOC	LBS	Neck Dia.	OAL	Radius Offering					
							0.010	0.020	0.030	0.060	0.090	0.120
SS-I-RN-40500	1/2	1/2	5/8	1.500	0.475	4			53387-85-D	53388-85-D	53389-85-D	52874-85-D
SS-I-RN-M-40500	1/2	1/2	5/8	2.250	0.475	4			53390-85-D	53391-85-D	53392-85-D	53393-85-D
SS-I-RN-L-40500	1/2	1/2	5/8	3.375	0.475	6			53394-85-D	53395-85-D	53396-85-D	53397-85-D
SS-I-RN-X-40500	1/2	1/2	5/8	4.125	0.475	6			53398-85-D	53399-85-D	53500-85-D	53501-85-D
SS-I-RN-40625	5/8	5/8	3/4	1.625	0.590	4			53502-85-D	53503-85-D	53504-85-D	53505-85-D
SS-I-RN-M-40625	5/8	5/8	3/4	2.375	0.590	6			53506-85-D	53507-85-D	53508-85-D	53509-85-D
SS-I-RN-L-40625	5/8	5/8	3/4	3.375	0.590	6			53510-85-D	53511-85-D	53512-85-D	53513-85-D
SS-I-RN-X-40625	5/8	5/8	3/4	4.125	0.590	6			53514-85-D	53515-85-D	53516-85-D	53517-85-D
SS-I-RN-40750	3/4	3/4	1	2.000	0.715	4			53518-85-D	53519-85-D	53520-85-D	53521-85-D
SS-I-RN-M-40750	3/4	3/4	1	2.500	0.715	6			51422-85-D	53522-85-D	53523-85-D	53524-85-D
SS-I-RN-L-40750	3/4	3/4	1	3.375	0.715	6			53525-85-D	53526-85-D	53527-85-D	53528-85-D
SS-I-RN-XL-40750	3/4	3/4	1	4.125	0.715	6			53529-85-D	53530-85-D	53531-85-D	53532-85-D
SS-I-RN-41000	1	1	1-1/4	2.250	0.960	4			53533-85-D	53534-85-D	53535-85-D	53536-85-D
SS-I-RN-M-41000	1	1	1-1/4	2.625	0.960	6			53537-85-D	53538-85-D	53539-85-D	53540-85-D
SS-I-RN-L-41000	1	1	1-1/4	3.375	0.960	6			53541-85-D	53542-85-D	53543-85-D	53544-85-D
SS-I-RN-X-41000	1	1	1-1/4	4.125	0.960	6			53545-85-D	53546-85-D	53547-85-D	53548-85-D



When the need arises for a tool to handle your profiling, modeling, or shaping operations in hard metals, look no farther than our SSI-4 Ball Nose Series. We have taken our SSI-4 geometry and added a precision, CNC ground, full ball radius. Our unique end design allows for heavier chip loads and faster metal removal rates than conventional ball nose end mills.

- 4 Flute, Variably Indexed
- Roughing and Finishing in Titanium and Ferrous Alloys
- Performance Carbide
- Stocked with C11 Coating

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  - Weldon Flats or Haimer Safe-Lock
  - Coolant Grooves and Through Holes

## SSI-BN-4

### C11 (AlTiN)

Part Number	Dia.	Shank	LOC	OAL	EDP
SS-I-BN-ST-40125	1/8	1/8	1/4	2	53549-85-D
SS-I-BN-40125	1/8	1/8	1/2	2-1/2	52550-85-D
SS-I-BN-ST-40156	5/32	3/16	5/16	2	53551-85-D
SS-I-BN-40156	5/32	3/16	9/16	2-1/2	53552-85-D
SS-I-BN-ST-40187	3/16	3/16	5/16	2	53553-85-D
SS-I-BN-40187	3/16	3/16	9/16	2-1/2	53554-85-D
SS-I-BN-ST-40218	7/32	1/4	3/8	2	53555-85-D
SS-I-BN-40218	7/32	1/4	3/4	2-1/2	53556-85-D
SS-I-BN-ST-40250	1/4	1/4	3/8	2	53557-85-D
SS-I-BN-40250	1/4	1/4	3/4	2-1/2	53558-85-D
SS-I-BN-ST-40281	9/32	5/16	7/16	2-1/2	53559-85-D
SS-I-BN-40281	9/32	5/16	3/4	2-1/2	53560-85-D
SS-I-BN-ST-40312	5/16	5/16	7/16	2-1/2	53561-85-D
SS-I-BN-40312	5/16	5/16	13/16	2-1/2	53562-85-D
SS-I-BN-ST-40343	11/32	3/8	1/2	2-1/2	53563-85-D
SS-I-BN-40343	11/32	3/8	1	2-1/2	53564-85-D
SS-I-BN-ST-40375	3/8	3/8	1/2	2-1/2	53565-85-D
SS-I-BN-40375	3/8	3/8	1	2-1/2	53566-85-D
SS-I-BN-ST-40437	7/16	7/16	9/16	2-1/2	53567-85-D
SS-I-BN-40437	7/16	7/16	1	3	53569-85-D
SS-I-BN-ST-40500	1/2	1/2	5/8	3	53570-85-D
SS-I-BN-40500	1/2	1/2	1-1/4	3	53571-85-D
SS-I-BN-ST-40625	5/8	5/8	3/4	3	53572-85-D
SS-I-BN-40625	5/8	5/8	1-5/8	3-1/2	53573-85-D
SS-I-BN-ST-40750	3/4	3/4	1	3	53574-85-D
SS-I-BN-40750	3/4	3/4	1-5/8	4	53575-85-D
SS-I-BN-ST-41000	1	1	1-1/4	4	53576-85-D
SS-I-BN-41000	1	1	2	5	53577-85-D

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The SSI-5 is the all terrain vehicle of our ferrous alloy series tools. It can “chew up the road” in most roughing applications and at the same time provide, smooth, high speed cruising well into finishing range. The SSI-5 will appeal to those who demand high performance and seek to minimize tool changes in a wide range of operations.

### Speed - Feed SSI-5 Flute

Diameter	Materials Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440L,	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 - 140	40 - 90	90 - 160	90 - 160
1/8"	S	0.0008	0.0008	0.0008	0.0008	0.0008	0.0006	0.0008	0.0007	0.0008	0.0010
	HP	0.0012	0.0011	0.0012	0.0012	0.0011	0.0008	0.0012	0.0011	0.0011	0.0014
	LP	0.0013	0.0013	0.0013	0.0013	0.0013	0.0009	0.0013	0.0012	0.0013	0.0016
	F	0.0024	0.0023	0.0024	0.0024	0.0023	0.0017	0.0024	0.0021	0.0023	0.0028
1/4"	S	0.0014	0.0011	0.0014	0.0014	0.0011	0.0007	0.0013	0.0009	0.0011	0.0013
	HP	0.0016	0.0013	0.0016	0.0016	0.0013	0.0009	0.0015	0.0012	0.0013	0.0015
	LP	0.0019	0.0016	0.0019	0.0019	0.0016	0.0011	0.0017	0.0014	0.0016	0.0017
	F	0.0035	0.0028	0.0035	0.0035	0.0028	0.0020	0.0031	0.0025	0.0028	0.0031
15/16"	S	0.0013	0.0011	0.0013	0.0013	0.0011	0.0009	0.0013	0.0011	0.0011	0.0013
	HP	0.0016	0.0013	0.0016	0.0016	0.0013	0.0013	0.0016	0.0016	0.0013	0.0016
	LP	0.0019	0.0015	0.0019	0.0019	0.0015	0.0015	0.0019	0.0019	0.0015	0.0019
	F	0.0033	0.0027	0.0033	0.0033	0.0027	0.0027	0.0033	0.0033	0.0027	0.0033
3/8"	S	0.0018	0.0015	0.0018	0.0018	0.0015	0.0012	0.0018	0.0015	0.0015	0.0018
	HP	0.0021	0.0017	0.0021	0.0021	0.0017	0.0017	0.0021	0.0021	0.0017	0.0021
	LP	0.0025	0.0020	0.0025	0.0025	0.0020	0.0020	0.0025	0.0025	0.0020	0.0025
	F	0.0045	0.0036	0.0045	0.0045	0.0036	0.0036	0.0045	0.0045	0.0036	0.0045
1/2"	S	0.0028	0.0022	0.0025	0.0025	0.0022	0.0014	0.0025	0.0018	0.0022	0.0022
	HP	0.0033	0.0026	0.0029	0.0029	0.0026	0.0019	0.0029	0.0024	0.0026	0.0029
	LP	0.0037	0.0029	0.0033	0.0033	0.0029	0.0021	0.0033	0.0026	0.0029	0.0035
	F	0.0066	0.0053	0.0059	0.0059	0.0053	0.0038	0.0059	0.0047	0.0053	0.0063
5/8"	S	0.0030	0.0024	0.0030	0.0030	0.0024	0.0020	0.0030	0.0025	0.0024	0.0030
	HP	0.0051	0.0041	0.0051	0.0051	0.0041	0.0032	0.0051	0.0040	0.0041	0.0051
	LP	0.0079	0.0063	0.0079	0.0079	0.0063	0.0048	0.0079	0.0060	0.0063	0.0079
	F	0.0142	0.0113	0.0142	0.0142	0.0113	0.0086	0.0142	0.0108	0.0113	0.0142
3/4"	S	0.0038	0.0024	0.0035	0.0035	0.0024	0.0022	0.0038	0.0028	0.0024	0.0035
	HP	0.0049	0.0030	0.0045	0.0045	0.0030	0.0029	0.0045	0.0036	0.0030	0.0045
	LP	0.0055	0.0034	0.0050	0.0050	0.0034	0.0040	0.0050	0.0050	0.0034	0.0050
	F	0.0086	0.0065	0.0089	0.0089	0.0065	0.0064	0.0086	0.0080	0.0065	0.0086
1"	S	0.0045	0.0045	0.0042	0.0042	0.0045	0.0028	0.0050	0.0035	0.0045	0.0050
	HP	0.0055	0.0053	0.0052	0.0052	0.0053	0.0034	0.0059	0.0043	0.0053	0.0059
	LP	0.0065	0.0059	0.0065	0.0065	0.0059	0.0042	0.0065	0.0053	0.0059	0.0065
	F	0.0105	0.0094	0.0105	0.0105	0.0094	0.0068	0.0105	0.0085	0.0094	0.0105

**S = SLOTTING**

Axial Depth up to 1.0 x Diameter

**HP = HEAVY PERIPHERAL**

Axial Depth up to 1.5 x Diameter  
Radial width .25 x Diameter

**LP = LIGHT PERIPHERAL**

Axial Depth up to 2.0 x Diameter  
Radial width .15 x Diameter

**F = FINISH**

Axial Depth up to Length Of Cut  
2.5 X Diameter Reduce SFM by 20%  
Radial width .015 x Diameter

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- Stocked in Square Ends and Radii

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  - Additional Coatings
  - Weldon Flats or Haimer Safe-Lock
  - Coolant Grooves and Through Holes

## SSI-5

Part Number	Dia.	Shank	LOC	OAL	Coating	Square			Radius Offering					
						0.000	0.010	0.020	0.030	0.060	0.090	0.120	0.156	0.190
S-I-ST-50125	1/8	1/8	1/4	2	AlTiN	53646-85-D	53647-85-D		53648-85-D					
					AlCrN	53646-70-D	53647-70-D		53648-70-D					
SS-I-50125	1/8	1/8	1/2	2-1/2	AlTiN	53652-85-D	53653-85-D		53654-85-D					
					AlCrN	53652-70-D	53653-70-D		53654-70-D					
SS-I-STS-50156	5/32	3/16	3/16	2	AlTiN	53658-85-D	53659-85-D							
					AlCrN	53658-70-D	53659-70-D							
SS-I-ST-50156	5/32	3/16	5/16	2	AlTiN	53662-85-D	53663-85-D							
					AlCrN	53662-70-D	53663-70-D							
SS-I-50156	5/32	3/16	9/16	2-1/2	AlTiN	53666-85-D	53667-85-D							
					AlCrN	53666-70-D	53667-70-D							
SS-I-STS-50187	3/16	3/16	3/16	2	AlTiN	53670-85-D	53671-85-D		53672-85-D					
					AlCrN	53670-70-D	53671-70-D		53672-70-D					
SS-I-ST-50187	3/16	3/16	5/16	2	AlTiN	53676-85-D	53677-85-D		53678-85-D					
					AlCrN	53676-70-D	53677-70-D		53678-70-D					
SS-I-50187	3/16	3/16	9/16	2-1/2	AlTiN	53682-85-D	53683-85-D		53684-85-D					
					AlCrN	53682-70-D	53683-70-D		53684-70-D					
SS-I-ST-50218	7/32	1/4	3/8	2	AlTiN	53688-85-D		53689-85-D						
					AlCrN	53688-70-D		53689-70-D						
SS-I-STL-50218	7/32	1/4	1/2	2-1/2	AlTiN	53692-85-D		53693-85-D						
					AlCrN	53692-70-D		53693-70-D						
SS-I-50218	7/32	1/4	3/4	2-1/2	AlTiN	53696-85-D		53697-85-D						
					AlCrN	53696-70-D		53697-70-D						
SS-I-ST-50250	1/4	1/4	3/8	2	AlTiN	53700-85-D		53704-85-D	53706-85-D					
					AlCrN	53700-70-D		53704-70-D	53706-70-D					
SS-I-STL-50250	1/4	1/4	1/2	2-1/2	AlTiN	53713-85-D		53714-85-D	53715-85-D					
					AlCrN	53713-70-D		53714-70-D	53715-70-D					
SS-I-50250	1/4	1/4	3/4	2-1/2	AlTiN	53721-85-D		53722-85-D	53724-85-D					
					AlCrN	53721-70-D		53722-70-D	53724-70-D					
SS-I-M-50250	1/4	1/4	1-1/4	3	AlTiN	53729-85-D		53730-85-D	53732-85-D					
					AlCrN	53729-70-D		53730-70-D	53732-70-D					



SSI-5														
Part Number	Dia.	Shank	LOC	OAL	Coating	Square				Radius Offering				
						0.000	0.010	0.020	0.030	0.060	0.090	0.120	0.156	0.190
SS-I-ST-50281	9/32	5/16	7/16	2-1/2	AlTiN	53737-85-D		53738-85-D						
					AlCrN	53737-70-D	53738-70-D							
SS-I-50281	9/32	5/16	3/4	2-1/2	AlTiN	53742-85-D		53744-85-D						
					AlCrN	53742-70-D	53744-70-D							
SS-I-ST-50312	5/16	5/16	7/16	2-1/2	AlTiN	53747-85-D		53748-85-D	53749-85-D					
					AlCrN	53747-70-D	53748-70-D	53749-70-D						
SS-I-STL-50312	5/16	5/16	5/8	2-1/2	AlTiN	53754-85-D		53756-85-D	53757-85-D					
					AlCrN	53754-70-D	53756-70-D	53757-70-D						
SS-I-50312	5/16	5/16	13/16	2-1/2	AlTiN	53761-85-D		54252-85-D	54253-85-D					
					AlCrN	53761-70-D	54252-70-D	54253-70-D						
SS-I-M-50312	5/16	5/16	1-1/4	3	AlTiN	53763-85-D		53764-85-D	53765-85-D					
					AlCrN	53763-70-D	53764-70-D	53765-70-D						
SS-I-ST-50343	11/32	3/8	1/2	2-1/2	AlTiN	53769-85-D		53770-85-D						
					AlCrN	53769-70-D	53770-70-D							
SS-I-50343	11/32	3/8	1	2-1/2	AlTiN	53773-85-D		53774-85-D						
					AlCrN	53773-70-D	53774-70-D							
SS-I-M-50343	11/32	3/8	1-1/4	3	AlTiN	53777-85-D		53778-85-D						
					AlCrN	53777-70-D	53778-70-D							
SS-I-ST-50375	3/8	3/8	1/2	2-1/2	AlTiN	53781-85-D		53782-85-D	53783-85-D	53784-85-D				
					AlCrN	53781-70-D	53782-70-D	53783-70-D	53784-70-D					
SS-I-STL-50375	3/8	3/8	3/4	2-1/2	AlTiN	53789-85-D		53790-85-D	53791-85-D	53792-85-D				
					AlCrN	53789-70-D	53790-70-D	53791-70-D	53792-70-D					
SS-I-50375	3/8	3/8	1	2-1/2	AlTiN	53797-85-D		53798-85-D	53799-85-D	53800-85-D				
					AlCrN	53797-70-D	53798-70-D	53799-70-D	53800-70-D					
SS-I-M-50375	3/8	3/8	1-1/4	3	AlTiN	53805-85-D		53806-85-D	53807-85-D	53808-85-D				
					AlCrN	53805-70-D	53806-70-D	53807-70-D	53808-70-D					
SS-I-L-50375	3/8	3/8	1-1/2	4	AlTiN	53813-85-D		53814-85-D	53815-85-D	53816-85-D				
					AlCrN	53813-70-D	53814-70-D	53815-70-D	53816-70-D					
SS-I-X-50375	3/8	3/8	2	4	AlTiN	53821-85-D		53822-85-D	53823-85-D	53824-85-D				
					AlCrN	53821-70-D	53822-70-D	53823-70-D	53824-70-D					

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## SSI-5

Part Number	Dia.	Shank	LOC	OAL	Coating	Square				Radius Offering				
						0.000	0.010	0.020	0.030	0.060	0.090	0.120	0.156	0.190
SS-I-ST-50406	13/32	7/16	9/16	2-1/2	AlTiN	53829-85-D		53830-85-D						
					AlCrN	53829-70-D	53830-70-D							
SS-I-50406	13/32	7/16	1	2-3/4	AlTiN	53833-85-D		53834-85-D						
					AlCrN	53833-70-D	53834-70-D							
SS-I-ST-50437	7/16	7/16	9/16	2-1/2	AlTiN	53837-85-D		53838-85-D	53839-85-D	53840-85-D				
					AlCrN	53837-70-D	53838-70-D	53839-70-D	53840-70-D					
SS-I-50437	7/16	7/16	1	3	AlTiN	53845-85-D		53846-85-D	53847-85-D	53848-85-D				
					AlCrN	53845-70-D	53846-70-D	53847-70-D	53848-70-D					
SS-I-M-50437	7/16	7/16	1-1/4	3-1/2	AlTiN	53853-85-D		53854-85-D	53855-85-D	53856-85-D				
					AlCrN	53853-70-D	53854-70-D	53855-70-D	53856-70-D					
SS-I-ST-50469	15/32	1/2	5/8	3	AlTiN	53861-85-D		53862-85-D						
					AlCrN	53861-70-D	53862-70-D							
SS-I-50469	15/32	1/2	1	3	AlTiN	53865-85-D		53866-85-D						
					AlCrN	53865-70-D	53866-70-D							
SS-I-M-50469	15/32	1/2	1-1/4	3-1/2	AlTiN	53869-85-D		53870-85-D						
					AlCrN	53869-70-D	53870-70-D							
SS-I-ST-50500	1/2	1/2	5/8	3	AlTiN	53873-85-D			53874-85-D	53875-85-D	53876-85-D	53877-85-D		
					AlCrN	53873-70-D		53874-70-D	53875-70-D	53876-70-D	53877-70-D			
SS-I-STL-50500	1/2	1/2	1	3	AlTiN	53883-85-D			53884-85-D	53885-85-D	53886-86-D	53887-85-D		
					AlCrN	53883-70-D		53884-70-D	53885-70-D	53886-70-D	53887-70-D			
SS-I-50500	1/2	1/2	1-1/4	3	AlTiN	53893-85-D			53894-85-D	53895-85-D	53896-85-D	53897-85-D		
					AlCrN	53893-70-D		53894-70-D	53895-70-D	53896-70-D	53897-70-D			
SS-I-M-50500	1/2	1/2	1-3/4	4	AlTiN	53907-85-D			53909-85-D	53911-85-D	53913-85-D	53914-85-D		
					AlCrN	53907-70-D		53909-70-D	53911-70-D	53913-70-D	53914-70-D			
SS-I-L-50500	1/2	1/2	2	4	AlTiN	53922-85-D			53924-85-D	53925-85-D	53926-85-D	53928-85-D		
					AlCrN	53922-70-D		53924-70-D	53925-70-D	53926-70-D	53928-70-D			
SS-I-X-50500	1/2	1/2	3	5	AlTiN	53936-85-D			53937-85-D	53938-85-D	53939-85-D	53941-85-D		
					AlCrN	53936-70-D		53937-70-D	53938-70-D	53939-70-D	53941-70-D			



Part Number	Dia.	Shank	LOC	OAL	Coating	Square				Radius Offering				
						0.000	0.010	0.020	0.030	0.060	0.090	0.120	0.156	0.190
SS-I-ST-50625	5/8	5/8	3/4	3	AlTiN	53948-85-D			53949-85-D	53950-85-D	53951-85-D	53952-85-D		
					AlCrN	53948-70-D			53949-70-D	53950-70-D	53951-70-D	53952-70-D		
SS-I-STL-50625	5/8	5/8	1-1/4	3-1/2	AlTiN	53960-85-D			53961-85-D	53962-85-D	53963-85-D	53964-85-D		
					AlCrN	53960-70-D			53961-70-D	53962-70-D	53963-70-D	53964-70-D		
SS-I-50625	5/8	5/8	1-5/8	3-1/2	AlTiN	53970-85-D			53971-85-D	53972-85-D	53973-85-D	53974-85-D		
					AlCrN	53970-70-D			53971-70-D	53972-70-D	53973-70-D	53974-70-D		
SS-I-M-50625	5/8	5/8	2	4	AlTiN	53985-85-D			53981-85-D	53982-85-D	53983-85-D	53984-85-D		
					AlCrN	53985-70-D			53981-70-D	53982-70-D	53983-70-D	53984-70-D		
SS-I-L-50625	5/8	5/8	2-1/2	5	AlTiN	53990-85-D			53991-85-D	53992-85-D	53993-85-D	53994-85-D		
					AlCrN	53990-70-D			53991-70-D	53992-70-D	53993-70-D	53994-70-D		
SS-I-X-50625	5/8	5/8	3	5	AlTiN	54000-85-D			54001-85-D	54002-85-D	54003-85-D	54004-85-D		
					AlCrN	54000-70-D			54001-70-D	54002-70-D	54003-70-D	54004-70-D		
SS-I-ST-50750	3/4	3/4	1	3	AlTiN	54010-85-D			54011-85-D	54012-85-D	54013-85-D	54014-85-D	54015-85-D	54016-85-D
					AlCrN	54010-70-D			54011-70-D	54012-70-D	54013-70-D	54014-70-D	54015-70-D	54016-70-D
SS-I-50750	3/4	3/4	1-5/8	4	AlTiN	54024-85-D			54025-85-D	54026-85-D	54027-85-D	54028-85-D	54029-85-D	54030-85-D
					AlCrN	54024-70-D			54025-70-D	54026-70-D	54027-70-D	54028-70-D	54029-70-D	54030-70-D
SS-I-M-50750	3/4	3/4	2 1/4	5	AlTiN	54038-85-D			54039-85-D	54040-85-D	54041-85-D	54042-85-D	54043-85-D	54044-85-D
					AlCrN	54038-70-D			54039-70-D	54040-70-D	54041-70-D	54042-70-D	54043-70-D	54044-70-D
SS-I-L-50750	3/4	3/4	3	6	AlTiN	54052-85-D			54053-85-D	54054-85-D	54055-85-D	54056-85-D	54057-85-D	54058-85-D
					AlCrN	54052-70-D			54053-70-D	54054-70-D	54055-70-D	54056-70-D	54057-70-D	54058-70-D
SS-I-X-50750	3/4	3/4	4	6	AlTiN	54066-85-D			54067-85-D	54068-85-D	54069-85-D	54070-85-D	54071-85-D	54072-85-D
					AlCrN	54066-70-D			54067-70-D	54068-70-D	54069-70-D	54070-70-D	54071-70-D	54072-70-D
SS-I-ST-51000	1	1	1-1/4	4	AlTiN	54080-85-D			54081-85-D	54082-85-D	54083-85-D	54084-85-D	54085-85-D	54086-85-D
					AlCrN	54080-70-D			54081-70-D	54082-70-D	54083-70-D	54084-70-D	54085-70-D	54086-70-D
SS-I-51000	1	1	2	5	AlTiN	54094-85-D			54095-85-D	54096-85-D	54097-85-D	54098-85-D	54099-85-D	54100-85-D
					AlCrN	54094-70-D			54095-70-D	54096-70-D	54097-70-D	54098-70-D	54099-70-D	54100-70-D
SS-I-M-51000	1	1	2-5/8	6	AlTiN	54115-85-D			54117-85-D	54119-85-D	54120-85-D	54121-85-D	54122-85-D	54124-85-D
					AlCrN	54115-70-D			54117-70-D	54119-70-D	54120-70-D	54121-70-D	54122-70-D	54124-70-D

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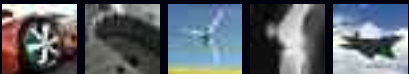
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# SSI-5 Five Flute Reduced Neck Offering Performance Carbide

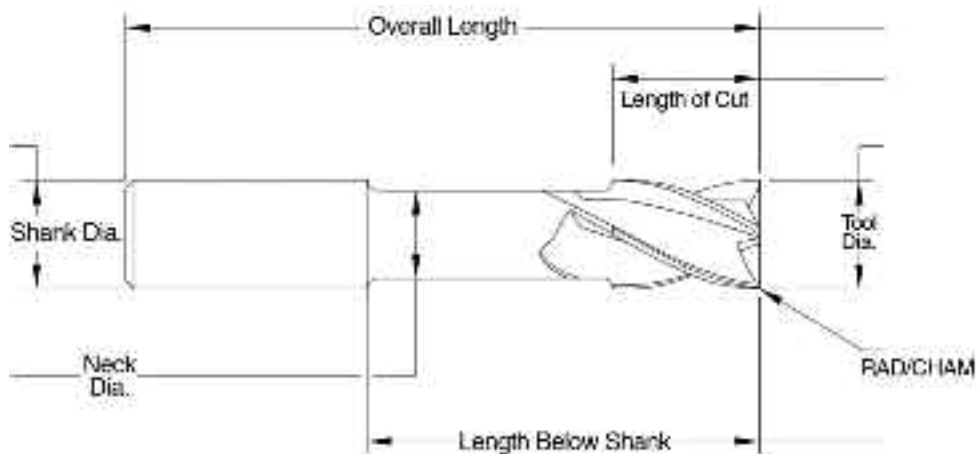


We have extended the SSI-5 geometry to a reduced neck offering. This design will enable end users to capture the exceptional metal removal rates of the SSI-5 for deep-reach milling.

## SSI-RN-5

C11-(AlTiN)

Part Number	Dia.	Shank	LOC	LBS	Neck Dia.	OAL	Radius Offering					
							0.010	0.020	0.030	0.060	0.090	0.120
SS-I-RN-50125	1/8	1/8	1/4	0.375	0.115	2-1/2	54134-85-D		54136-85-D			
SS-I-RN-M-50125	1/8	1/8	1/4	0.500	0.115	2-1/2	54137-85-D		54138-85-D			
SS-I-RN-L-50125	1/8	1/8	1/4	0.625	0.115	2-1/2	54139-85-D		54141-85-D			
SS-I-RN-50187	3/16	3/16	5/16	0.500	0.175	3	54142-85-D		54144-85-D			
SS-I-RN-M-50187	3/16	3/16	5/16	0.750	0.175	3	54145-85-D		54146-85-D			
SS-I-RN-L-50187	3/16	3/16	5/16	1.000	0.175	3	54147-85-D		54148-85-D			
SS-I-RN-50250	1/4	1/4	3/8	0.750	0.235	3		54149-85-D	54150-85-D	54151-85-D		
SS-I-RN-M-50250	1/4	1/4	3/8	1.125	0.235	4		54152-85-D	54154-85-D	54156-85-D		
SS-I-RN-L-50250	1/4	1/4	3/8	2.125	0.235	4		54157-85-D	54158-85-D	54159-85-D		
SS-I-RN-50375	3/8	3/8	1/2	1.125	0.355	4		54160-85-D	54161-85-D	54162-85-D	54163-85-D	
SS-I-RN-M-50375	3/8	3/8	1/2	2.125	0.355	4		54164-85-D	54165-85-D	54166-85-D	54167-85-D	
SS-I-RN-L-50375	3/8	3/8	1/2	3.125	0.355	6		54168-85-D	54169-85-D	54170-85-D	54171-85-D	
SS-I-RN-X-50375	3/8	3/8	1/2	4.125	0.355	6		54172-85-D	54173-85-D	54174-85-D	54175-85-D	



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# SSI-5 Five Flute Reduced Neck Offering Performance Carbide



- 5 Flute, Variably Indexed
- Roughing and Finishing in Titanium and Ferrous Alloys
- Performance Carbide
- Stocked with C11 Coating

- Available Upon Request:
  - Additional Coatings
  - Weldon Flats or Haimer Safe-Lock
  - Coolant Grooves and Through Holes

## SSI-RN-5

Part Number	Dia.	Shank	LOC	LBS	Neck Dia.	OAL	Radius Offering					
							0.010	0.020	0.030	0.060	0.090	0.120
SS-I-RN-50500	1/2	1/2	5/8	1.500	0.475	4			54176-85-D	54177-85-D	54178-85-D	54179-85-D
SS-I-RN-M-50500	1/2	1/2	5/8	2.250	0.475	4			54180-85-D	54181-85-D	54182-85-D	54183-85-D
SS-I-RN-L-50500	1/2	1/2	5/8	3.375	0.475	6			54184-85-D	54185-85-D	54186-85-D	54187-85-D
SS-I-RN-X-50500	1/2	1/2	5/8	4.125	0.475	6			54188-85-D	54189-85-D	54190-85-D	54191-85-D
SS-I-RN-50625	5/8	5/8	3/4	1.625	0.590	4			54192-85-D	54193-85-D	54194-85-D	54195-85-D
SS-I-RN-M-50625	5/8	5/8	3/4	2.375	0.590	6			54196-85-D	54197-85-D	54198-85-D	54199-85-D
SS-I-RN-L-50625	5/8	5/8	3/4	3.375	0.590	6			54200-85-D	54201-85-D	54202-85-D	54203-85-D
SS-I-RN-X-50625	5/8	5/8	3/4	4.125	0.590	6			54204-85-D	54205-85-D	54206-85-D	54207-85-D
SS-I-RN-50750	3/4	3/4	1	2.000	0.715	4			54208-85-D	54209-85-D	54210-85-D	54211-85-D
SS-I-RN-M-50750	3/4	3/4	1	2.500	0.715	6			54212-85-D	54213-85-D	54214-85-D	54215-85-D
SS-I-RN-L-50750	3/4	3/4	1	3.375	0.715	6			54216-85-D	54217-85-D	54218-85-D	54219-85-D
SS-I-RN-XL-50750	3/4	3/4	1	4.125	0.715	6			54220-85-D	54221-85-D	54222-85-D	54223-85-D
SS-I-RN-51000	1	1	1-1/4	2.250	0.960	4			54224-85-D	54225-85-D	54226-85-D	54227-85-D
SS-I-RN-M-51000	1	1	1-1/4	2.625	0.960	6			54228-85-D	54229-85-D	54230-85-D	54231-85-D
SS-I-RN-L-51000	1	1	1-1/4	3.375	0.960	6			54232-85-D	54233-85-D	54234-85-D	54235-85-D
SS-I-RN-X-51000	1	1	1-1/4	4.125	0.960	6			54236-85-D	54237-85-D	54238-85-D	54239-85-D



Our MH series is the tool of choice for finishing and light profile roughing in ferrous materials. The odd number of flutes disrupts unwanted harmonics. Our medium helix provides an optimum shear angle to aid chip evacuation. We have a full offering of square ends, corner radii, lengths and coatings to fit nearly any profiling operation.

- Performance Carbide
- Eccentric Primary
- 45 Degree Helix
- Wide Array of Radii

- Available Upon Request:
  - Additional Coatings
  - Haimer Safe-Lock
  - Coolant Grooves

### Initial Speeds (SFM) and Feeds (Chip-Load per/tooth)

Diameter	Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 - 140	40 - 90	90 - 160	90 - 160
1/8"	HP	0.0008	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0005	0.0007	0.0007
	LP	0.0011	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0007	0.0010	0.0010
	F	0.0014	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0010	0.0013	0.0013
1/4"	HP	0.0017	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0010	0.0014	0.0014
	LP	0.0021	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0014	0.0019	0.0019
	F	0.0028	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0020	0.0025	0.0025
5/16"	HP	0.0021	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0012	0.0018	0.0018
	LP	0.0034	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0025	0.0031	0.0031
	F	0.0034	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0025	0.0031	0.0031
3/8"	HP	0.0025	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0014	0.0021	0.0021
	LP	0.0032	0.0029	0.0029	0.0029	0.0029	0.0029	0.0029	0.0021	0.0029	0.0029
	F	0.0041	0.0038	0.0038	0.0038	0.0038	0.0038	0.0038	0.0030	0.0038	0.0038
1/2"	HP	0.0035	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0020	0.0030	0.0030
	LP	0.0045	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0030	0.0040	0.0040
	F	0.0055	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0040	0.0050	0.0050
5/8"	HP	0.0042	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0024	0.0036	0.0036
	LP	0.0053	0.0048	0.0048	0.0048	0.0048	0.0048	0.0048	0.0036	0.0048	0.0048
	F	0.0065	0.0059	0.0059	0.0059	0.0059	0.0059	0.0059	0.0048	0.0059	0.0059
3/4"	HP	0.0050	0.0043	0.0043	0.0043	0.0043	0.0043	0.0043	0.0029	0.0043	0.0043
	LP	0.0064	0.0057	0.0057	0.0057	0.0057	0.0057	0.0057	0.0043	0.0057	0.0057
	F	0.0078	0.0071	0.0071	0.0071	0.0071	0.0071	0.0071	0.0057	0.0071	0.0071
1"	HP	0.0090	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0060	0.0080	0.0080
	LP	0.0090	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0060	0.0080	0.0080
	F	0.0110	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0080	0.0100	0.0100
1-1/4"	HP	0.0079	0.0068	0.0068	0.0068	0.0068	0.0068	0.0068	0.0045	0.0068	0.0068
	LP	0.0101	0.0090	0.0090	0.0090	0.0090	0.0090	0.0090	0.0068	0.0090	0.0090
	F	0.0124	0.0113	0.0113	0.0113	0.0113	0.0113	0.0113	0.0090	0.0113	0.0113

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.0 x Diameter  
Radial width .2 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
Effective Length of Cut  
Radial width .05 x Diameter

**F = FINISH**  
Axial Depth up to  
Effective Length Of Cut  
Radial width .02 x Diameter

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.



Part Number	Diameter	Shank	LOC	OAL	No. of Flutes	EDP	AITiN EDP	AICrN EDP
MH-ST-50125-375	1/8	3/8	1/4	2-1/2	5	52100-00-D	52100-85-D	52100-70-D
MH-ST-50125	1/8	1/8	1/4	1-1/2	5	40251-00-D	40251-85-D	40251-70-D
MH-50125-375	1/8	3/8	1/2	2-1/2	5	52118-00-D	52118-85-D	52118-70-D
MH-50125	1/8	1/8	1/2	1-1/2	5	39696-00-D	39696-85-D	39696-70-D
MH-ST-50156	5/32	3/16	5/16	2	5	40259-00-D	40259-85-D	40259-70-D
MH-50156	5/32	3/16	9/16	2	5	39704-00-D	39704-85-D	39704-70-D
MH-ST-50187-375	3/16	3/8	5/16	2-1/2	5	52106-00-D	52106-85-D	52106-70-D
MH-ST-50187	3/16	3/16	5/16	2	5	40267-00-D	40267-85-D	40267-70-D
MH-50187-375	3/16	3/8	5/8	2-1/2	5	52124-00-D	52124-85-D	52124-70-D
MH-50187	3/16	3/16	9/16	2	5	39712-00-D	39712-85-D	39712-70-D
MH-ST-50218	7/32	1/4	3/8	2	5	40275-00-D	40275-85-D	40275-70-D
MH-50218	7/32	1/4	3/4	2-1/2	5	39720-00-D	39720-85-D	39720-70-D
MH-ST-50250-375	1/4	3/8	3/8	2-1/2	5	52112-00-D	52112-85-D	52112-70-D
MH-ST-50250	1/4	1/4	3/8	2	5	40283-00-D	40283-85-D	40283-70-D
MH-50250-375	1/4	3/8	3/4	2-1/2	5	52130-00-D	52130-85-D	52130-70-D
MH-50250	1/4	1/4	3/4	2-1/2	5	39728-00-D	39728-85-D	39728-70-D
MH-L-50250	1/4	1/4	1-1/4	4	5	39912-00-D	39912-85-D	39912-70-D
MH-ST-50281	9/32	5/16	7/16	2	5	40291-00-D	40291-85-D	40291-70-D
MH-50281	9/32	5/16	13/16	2-1/2	5	39736-00-D	39736-85-D	39736-70-D
MH-ST-50312	5/16	5/16	7/16	2	5	40299-00-D	40299-85-D	40299-70-D
MH-50312	5/16	5/16	13/16	2-1/2	5	39744-00-D	39744-85-D	39744-70-D
MH-L-50312	5/16	5/16	1-1/4	4	5	39920-00-D	39920-85-D	39920-70-D
MH-X-50312	5/16	5/16	2-1/8	4	5	40379-00-D	40379-85-D	40379-70-D
MH-ST-50343	11/32	3/8	1/2	2	5	40307-00-D	40307-85-D	40307-70-D
MH-50343	11/32	3/8	1	2-1/2	5	39752-00-D	39752-85-D	39752-70-D
MH-ST-50375	3/8	3/8	1/2	2	5	40315-00-D	40315-85-D	40315-70-D
MH-50375	3/8	3/8	1	2-1/2	5	39760-00-D	39760-85-D	39760-70-D
MH-M-50375	3/8	3/8	1-1/4	3	5	51643-00-D	51643-85-D	51643-70-D
MH-L-50375	3/8	3/8	1-1/2	4	5	39928-00-D	39928-85-D	39928-70-D
MH-X-50375	3/8	3/8	2-1/2	6	5	40387-00-D	40387-85-D	40387-70-D
MH-ST-50406	13/32	7/16	9/16	2-1/2	5	40323-00-D	40323-85-D	40323-70-D
MH-50406	13/32	7/16	1	2-3/4	5	39768-00-D	39768-85-D	39768-70-D
MH-ST-50437	7/16	7/16	9/16	2-1/2	5	40331-00-D	40331-85-D	40331-70-D
MH-50437	7/16	7/16	1	2-3/4	5	39776-00-D	39776-85-D	39776-70-D
MH-L-50437	7/16	7/16	2	4	5	39936-00-D	39936-85-D	39936-70-D
MH-ST-50468	15/32	1/2	5/8	2-1/2	5	40339-00-D	40339-85-D	40339-70-D
MH-50468	15/32	1/2	1-1/4	3	5	39784-00-D	39784-85-D	39784-70-D
MH-ST-50500	1/2	1/2	5/8	2-1/2	5	40347-00-D	40347-85-D	40347-70-D
MH-50500	1/2	1/2	1-1/4	3	5	39792-00-D	39792-85-D	39792-70-D
MH-M-50500	1/2	1/2	1-5/8	4	5	51650-00-D	51650-85-D	51650-70-D
MH-L-50500	1/2	1/2	2	4	5	39944-00-D	39944-85-D	39944-70-D
MH-X-50500	1/2	1/2	3-1/8	6	5	40395-00-D	40395-85-D	40395-70-D
MH-50562	9/16	9/16	1-1/2	3-1/2	5	39800-00-D	39800-85-D	39800-70-D
MH-ST-50625	5/8	5/8	3/4	3	5	40355-00-D	40355-85-D	40355-70-D
MH-50625	5/8	5/8	1-5/8	3-1/2	5	39808-00-D	39808-85-D	39808-70-D
MH-M-50625	5/8	5/8	2-1/8	4	5	51657-00-D	51657-85-D	51657-70-D
MH-L-50625	5/8	5/8	2-1/2	5	5	39952-00-D	39952-85-D	39952-70-D
MH-X-50625	5/8	5/8	4	6	5	40403-00-D	40403-85-D	40403-70-D
MH-ST-50750	3/4	3/4	1	3	5	40363-00-D	40363-85-D	40363-70-D
MH-50750	3/4	3/4	1-5/8	4	5	39816-00-D	39816-85-D	39816-70-D
MH-M-50750	3/4	3/4	2-1/4	5	5	39991-00-D	39991-85-D	39991-70-D
MH-L-50750	3/4	3/4	3-1/4	6	5	39960-00-D	39960-85-D	39960-70-D
MH-X-50750	3/4	3/4	4	6	5	40411-00-D	40411-85-D	40411-70-D
MH-50875	7/8	7/8	2	4	5	39824-00-D	39824-85-D	39824-70-D
MH-ST-51000	1	1	1-1/4	3	5	40371-00-D	40371-85-D	40371-70-D
MH-51000	1	1	2	4	5	39832-00-D	39832-85-D	39832-70-D
MH-M-51000	1	1	2-5/8	6	5	39999-00-D	39999-85-D	39999-70-D
MH-L-51000	1	1	3-1/4	6	5	39968-00-D	39968-85-D	39968-70-D
MH-X-51000	1	1	4-1/8	7	5	40419-00-D	40419-85-D	40419-70-D
MH-71250	1-1/4	1-1/4	2	4-1/2	7	39848-00-D	39848-85-D	39848-70-D
MH-L-71250	1-1/4	1-1/4	3-1/4	6	7	39984-00-D	39984-85-D	39984-70-D
MH-X-71250	1-1/4	1-1/4	5	7-1/2	7	40427-00-D	40427-85-D	40427-70-D



The MHCR series features our MH series as the platform to which a precision ground corner radius is applied, in a wide array of diameters and lengths, radii range from .030-.187". All of the tools are available from stock, which means no waiting for an altered tool.

### Initial Speeds (SFM) and Feeds (Chip-Load per/tooth)

Diameter	Materials Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
	SFM < 32Rc SFM > 32Rc	200 - 450 100 - 250	150 - 300 80 - 200	150 - 350 80 - 200	200 - 450 100 - 250	80 - 250 90 - 125	250 - 450 130 - 300	120 - 350 80 - 140	70 - 120 40 - 90	140 - 220 90 - 160	140 - 200 90 - 160
1/4"	HP	0.0017	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0010	0.0014	0.0014
	LP	0.0021	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0014	0.0019	0.0019
	F	0.0028	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0020	0.0025	0.0025
5/16"	HP	0.0021	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0012	0.0018	0.0018
	LP	0.0034	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0025	0.0031	0.0031
	F	0.0034	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0025	0.0031	0.0031
3/8"	HP	0.0025	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0014	0.0021	0.0021
	LP	0.0032	0.0029	0.0029	0.0029	0.0029	0.0029	0.0029	0.0021	0.0029	0.0029
	F	0.0041	0.0038	0.0038	0.0038	0.0038	0.0038	0.0038	0.0030	0.0038	0.0038
1/2"	HP	0.0035	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0020	0.0030	0.0030
	LP	0.0045	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0030	0.0040	0.0040
	F	0.0055	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0040	0.0050	0.0050
5/8"	HP	0.0042	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0024	0.0036	0.0036
	LP	0.0053	0.0048	0.0048	0.0048	0.0048	0.0048	0.0048	0.0036	0.0048	0.0048
	F	0.0065	0.0059	0.0059	0.0059	0.0059	0.0059	0.0059	0.0048	0.0059	0.0059
3/4"	HP	0.0050	0.0043	0.0043	0.0043	0.0043	0.0043	0.0043	0.0029	0.0043	0.0043
	LP	0.0064	0.0057	0.0057	0.0057	0.0057	0.0057	0.0057	0.0043	0.0057	0.0057
	F	0.0078	0.0071	0.0071	0.0071	0.0071	0.0071	0.0071	0.0057	0.0071	0.0071
1"	HP	0.0090	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0060	0.0080	0.0080
	LP	0.0090	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0060	0.0080	0.0080
	F	0.0110	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0080	0.0100	0.0100
1-1/4"	HP	0.0079	0.0068	0.0068	0.0068	0.0068	0.0068	0.0068	0.0045	0.0068	0.0068
	LP	0.0101	0.0090	0.0090	0.0090	0.0090	0.0090	0.0090	0.0068	0.0090	0.0090
	F	0.0124	0.0113	0.0113	0.0113	0.0113	0.0113	0.0113	0.0090	0.0113	0.0113

**HP = HEAVY PERIPHERAL**  
Axial Depth up to  
1.0 x Diameter  
Radial width .2 x Diameter

**LP = LIGHT PERIPHERAL**  
Axial Depth up to  
Effective Length of Cut  
Radial width .05 x Diameter

**F = FINISH**  
Axial Depth up to  
Effective Length Of Cut  
Radial width .02 x Diameter

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- Performance Carbide
- Eccentric Primary
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- Wide Array of Radii

- Available Upon Request:
  - Additional Coatings
  - Haimer Safe-Lock
  - Coolant Grooves

## MH-CR

Part Number	Dia.	Shank	LOC	OAL	No. of Flutes	Coating	Radius Offering					
							.030"	.060"	.090"	.125"	.156"	.187"
MHCR-ST-50250	1/4	1/4	3/8	2	5	Uncoated AlTiN AlCrN	48736-00-D 48736-85-D 48736-70-D					
MHCR-50250	1/4	1/4	3/4	2-1/2	5	Uncoated AlTiN AlCrN	48767-00-D 48767-85-D 48767-70-D					
MHCR-M-50250	1/4	1/4	1	3	5	Uncoated AlTiN AlCrN	50292-00-D 50292-85-D 50292-70-D					
MHCR-L-50250	1/4	1/4	1-1/4	4	5	Uncoated AlTiN AlCrN	50329-00-D 50329-85-D 50329-70-D					
MHCR-X-50250	1/4	1/4	2	6	5	Uncoated AlTiN AlCrN	48700-00-D 48700-85-D 48700-70-D					
MHCR-ST-50375	3/8	3/8	1/2	2	5	Uncoated AlTiN AlCrN	48740-00-D 48740-85-D 48740-70-D	48748-00-D 48748-85-D 48748-70-D				
MHCR-50375	3/8	3/8	1	2-1/2	5	Uncoated AlTiN AlCrN	48771-00-D 48771-85-D 48771-70-D	48780-00-D 48780-85-D 48780-70-D				
MHCR-M-50375	3/8	3/8	1-1/4	3	5	Uncoated AlTiN AlCrN	50296-00-D 50296-85-D 50296-70-D	50306-00-D 50306-85-D 50306-70-D				
MHCR-L-50375	3/8	3/8	1-1/2	4	5	Uncoated AlTiN AlCrN	50335-00-D 50335-85-D 50335-70-D	50346-00-D 50346-85-D 50346-70-D				
MHCR-X-50375	3/8	3/8	2-1/2	6	5	Uncoated AlTiN AlCrN	48704-00-D 48704-85-D 48704-70-D	48713-00-D 48713-85-D 48713-70-D				
MHCR-ST-50500	1/2	1/2	5/8	2-1/2	5	Uncoated AlTiN AlCrN	49909-00-D 49909-85-D 49909-70-D	49966-00-D 49966-85-D 49966-70-D	49993-00-D 49993-85-D 49993-70-D			
MHCR-50500	1/2	1/2	1-1/4	3	5	Uncoated AlTiN AlCrN	49921-00-D 49921-85-D 49921-70-D	49978-00-D 49978-85-D 49978-70-D	50005-00-D 50005-85-D 50005-70-D			
MHCR-M-50500	1/2	1/2	1-5/8	4	5	Uncoated AlTiN AlCrN	50228-00-D 50228-85-D 50228-70-D	50240-00-D 50240-85-D 50240-70-D	50254-00-D 50254-85-D 50254-70-D			
MHCR-L-50500	1/2	1/2	2	4	5	Uncoated AlTiN AlCrN	49936-00-D 49936-85-D 49936-70-D	50203-00-D 50203-85-D 50203-70-D	50020-00-D 50020-85-D 50020-70-D			
MHCR-X-50500	1/2	1/2	3-1/8	6	5	Uncoated AlTiN AlCrN	49951-00-D 49951-85-D 49951-70-D	49876-00-D 49876-85-D 49876-70-D	50035-00-D 50035-85-D 50035-70-D			



## MH-CR

Part Number	Dia.	Shank	LOC	OAL	No. of Flutes	Coating	Radius Offering					
							.030"	.060"	.090"	.125"	.156"	.187"
MHCR-ST-50625	5/8	5/8	3/4	3	5	Uncoated	49912-00-D	49969-00-D	49996-00-D	50050-00-D		
						AlTiN	49912-85-D	49969-85-D	49996-85-D	50050-85-D		
						AlCrN	49912-70-D	49969-70-D	49996-70-D	50050-70-D		
MHCR-50625	5/8	5/8	1-5/8	3-1/2	5	Uncoated	49924-00-D	49981-00-D	50008-00-D	50059-00-D		
						AlTiN	49924-85-D	49981-85-D	50008-85-D	50059-85-D		
						AlCrN	49924-70-D	49981-70-D	50008-70-D	50059-70-D		
MHCR-M-50625	5/8	5/8	2-1/8	4	5	Uncoated	50231-00-D	50244-00-D	50257-00-D	50271-00-D		
						AlTiN	50231-85-D	50244-85-D	50257-85-D	50271-85-D		
						AlCrN	50231-70-D	50244-70-D	50257-70-D	50271-70-D		
MHCR-L-50625	5/8	5/8	2-1/2	5	5	Uncoated	49939-00-D	50206-00-D	50023-00-D	50071-00-D		
						AlTiN	49939-85-D	50206-85-D	50023-85-D	50071-85-D		
						AlCrN	49939-70-D	50206-70-D	50023-70-D	50071-70-D		
MHCR-X-50625	5/8	5/8	4	6	5	Uncoated	49954-00-D	49879-00-D	50038-00-D	50083-00-D		
						AlTiN	49954-85-D	49879-85-D	50038-85-D	50083-85-D		
						AlCrN	49954-70-D	49879-70-D	50038-70-D	50083-70-D		
MHCR-ST-50750	3/4	3/4	1	3	5	Uncoated	49915-00-D	49972-00-D	49999-00-D	50053-00-D	50095-00-D	50160-00-D
						AlTiN	49915-85-D	49972-85-D	49999-85-D	50053-85-D	50095-85-D	50160-85-D
						AlCrN	49915-70-D	49972-70-D	49999-70-D	50053-70-D	50095-70-D	50160-70-D
MHCR-50750	3/4	3/4	1-5/8	4	5	Uncoated	49927-00-D	49984-00-D	50011-00-D	50062-00-D	50111-00-D	50168-00-D
						AlTiN	49927-85-D	49984-85-D	50011-85-D	50062-85-D	50111-85-D	50168-85-D
						AlCrN	49927-70-D	49984-70-D	50011-70-D	50062-70-D	50111-70-D	50168-70-D
MHCR-M-50750	3/4	3/4	2-1/4	5	5	Uncoated	50234-00-D	50247-00-D	50262-00-D	50274-00-D	50280-00-D	50286-00-D
						AlTiN	50234-85-D	50247-85-D	50262-85-D	50274-85-D	50280-85-D	50286-85-D
						AlCrN	50234-70-D	50247-70-D	50262-70-D	50274-70-D	50280-70-D	50286-70-D
MHCR-L-50750	3/4	3/4	3-1/4	6	5	Uncoated	49942-00-D	50209-00-D	50026-00-D	50074-00-D	50122-00-D	50182-00-D
						AlTiN	49942-85-D	50209-85-D	50026-85-D	50074-85-D	50122-85-D	50182-85-D
						AlCrN	49942-70-D	50209-70-D	50026-70-D	50074-70-D	50122-70-D	50182-70-D
MHCR-X-50750	3/4	3/4	4	6	5	Uncoated	49957-00-D	49882-00-D	50041-00-D	50086-00-D	50136-00-D	50191-00-D
						AlTiN	49957-85-D	49882-85-D	50041-85-D	50086-85-D	50136-85-D	50191-85-D
						AlCrN	49957-70-D	49882-70-D	50041-70-D	50086-70-D	50136-70-D	50191-70-D

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.





- Performance Carbide
- Eccentric Primary
- 45 Degree Helix
- Wide Array of Radii

- Available Upon Request:
  - Additional Coatings
  - Haimer Safe-Lock
  - Coolant Grooves

## MH-CR

Part Number	Dia.	Shank	LOC	OAL	No. of Flutes	Coating	Radius Offering					
							.030"	.060"	.090"	.125"	.156"	.187"
MHCR-ST-51000	1	1	1-1/4	3	5	Uncoated	49918-00-D	49975-00-D	50002-00-D	50056-00-D	50098-00-D	50164-00-D
						AlTiN	49918-85-D	49975-85-D	50002-85-D	50056-85-D	50098-85-D	50164-85-D
						AlCrN	49918-70-D	49975-70-D	50002-70-D	50056-70-D	50098-70-D	50164-70-D
MHCR-51000	1	1	2	4	5	Uncoated	49930-00-D	49987-00-D	50014-00-D	50065-00-D	50114-00-D	50173-00-D
						AlTiN	49930-85-D	49987-85-D	50014-85-D	50065-85-D	50114-85-D	50173-85-D
						AlCrN	49930-70-D	49987-70-D	50014-70-D	50065-70-D	50114-70-D	50173-70-D
MHCR-M-51000	1	1	2-5/8	6	5	Uncoated	50237-00-D	50251-00-D	50265-00-D	50277-00-D	50283-00-D	50289-00-D
						AlTiN	50237-85-D	50251-85-D	50265-85-D	50277-85-D	50283-85-D	50289-85-D
						AlCrN	50237-70-D	50251-70-D	50265-70-D	50277-70-D	50283-70-D	50289-70-D
MHCR-L-51000	1	1	3-1/4	6	5	Uncoated	49945-00-D	50214-00-D	50029-00-D	50077-00-D	50127-00-D	50185-00-D
						AlTiN	49945-85-D	50214-85-D	50029-85-D	50077-85-D	50127-85-D	50185-85-D
						AlCrN	49945-70-D	50214-70-D	50029-70-D	50077-70-D	50127-70-D	50185-70-D
MHCR-X-51000	1	1	4-1/8	7	5	Uncoated	49960-00-D	49885-00-D	50044-00-D	50089-00-D	50141-00-D	50194-00-D
						AlTiN	49960-85-D	49885-85-D	50044-85-D	50089-85-D	50141-85-D	50194-85-D
						AlCrN	49960-70-D	49885-70-D	50044-70-D	50089-70-D	50141-70-D	50194-70-D
MHCR-71250	1-1/4	1-1/4	2	4-1/2	7	Uncoated	49933-00-D	49990-00-D	50017-00-D	50068-00-D	50118-00-D	50179-00-D
						AlTiN	49933-85-D	49990-85-D	50017-85-D	50068-85-D	50118-85-D	50179-85-D
						AlCrN	49933-70-D	49990-70-D	40017-70-D	50068-70-D	50118-70-D	50179-70-D
MHCR-L-71250	1-1/4	1-1/4	3-1/4	6	7	Uncoated	49948-00-D	50217-00-D	50032-00-D	50080-00-D	50132-00-D	50188-00-D
						AlTiN	49948-85-D	50217-85-D	50032-85-D	50080-85-D	50132-85-D	50188-85-D
						AlCrN	49948-70-D	50217-70-D	50032-70-D	50080-70-D	50132-70-D	50188-70-D
MHCR-X-71250	1-1/4	1-1/4	5	7-1/2	7	Uncoated	49963-00-D	49888-00-D	50047-00-D	50092-00-D	50145-00-D	50197-00-D
						AlTiN	49963-85-D	49888-85-D	50047-85-D	50092-85-D	50145-85-D	50197-85-D
						AlCrN	49963-70-D	49888-70-D	50047-70-D	50092-70-D	50145-70-D	50197-70-D



Data Flute is pleased to introduce the Titanium Multi-Flute Series (TiM). This is a multi-flute finisher designed for light radial depths of cut at very high feed rates. This tool is also available with a special end feature for achieving superior bottom finishes.

- 8, 10 and 12 Flute Variants
- Full Eccentric Grind
- Performance Carbide
- 40 Degree Helix

- Available Upon Request:
  - Coolant Grooves
  - Haimer Safe-Lock
  - Additional Coatings

## TiM

Part Number	Dia.	Shank	LOC	LBS	Neck Dia.	OAL	No. of Flutes	Coating	Radius Offering			
									.030"	.060"	.090"	.120"
TiM-ST-80750	3/4	3/4	1-1/8	2-1/2	0.715	4	8	Uncoated	54260-00-D	54261-00-D	54262-00-D	54263-00-D
								AlCrN	54260-70-D	54261-70-D	54262-70-D	54263-70-D
								AlTiN	54260-85-D	54261-85-D	54262-85-D	54263-85-D
TiM-80750-	3/4	3/4	2-1/8	4-1/2	0.715	6	8	Uncoated	54256-00-D	54257-00-D	54258-00-D	54259-00-D
								AlCrN	54256-70-D	54257-70-D	54258-70-D	54259-70-D
								AlTiN	54256-85-D	54257-85-D	54258-85-D	54259-85-D
TiM-ST-100100	1	1	1-1/8	2-1/2	0.960	4	10	Uncoated	54268-00-D	54269-00-D	54270-00-D	54271-00-D
								AlCrN	54268-70-D	54269-70-D	54270-70-D	54271-70-D
								AlTiN	54268-85-D	54269-85-D	54270-85-D	54271-85-D
TiM-100100	1	1	2-1/8	4-1/2	0.960	6	10	Uncoated	54264-00-D	54265-00-D	54266-00-D	54267-00-D
								AlCrN	54264-70-D	54265-70-D	54266-70-D	54267-70-D
								AlTiN	54264-85-D	54265-85-D	54266-85-D	54267-86-D
TiM-ST-1201250	1-1/4	1-1/4	1-1/8	2-1/2	1.21	4	12	Uncoated	54276-00-D	54277-00-D	54278-00-D	54279-00-D
								AlCrN	54276-70-D	54277-70-D	54278-70-D	54279-79-D
								AlTiN	54276-85-D	54277-85-D	54278-85-D	54279-85-D
TiM-1201250	1-1/4	1-1/4	2-1/8	4-1/2	1.21	6	12	Uncoated	54272-00-D	54273-00-D	54274-00-D	54275-00-D
								AlCrN	54272-70-D	54273-70-D	54274-70-D	54275-70-D
								AlTiN	54272-85-D	54273-85-D	54274-85-D	54275-85-D

TiM Series was designed for titanium finishing. The TiM Series was designed for surface finishing at a higher SFM. The focus is on chip thickness. The chip thickness is at .0005 to .001 chip thickness.

For Example:

On a 1.000 diameter tool with 10 flutes @ .0007 chip thickness

400 SFM - 1528 RPM .030 Radial depth of cut

.003 center line chip load per tooth = 46 IPM and a .0007 chip thickness

For additional support and for maximum optimization of your Data Flute tools, call us toll free at 800.447.1476 and ask to speak to our Technical Support Department.





# Precision Hole Saws and Arbors



**Weldon Tool** has been manufacturing quality, high performance end mills and cutting tools for over 90 years. The same manufacturing expertise is now being applied to a line of aerospace hole saws. These saws are made from high speed steel in a precision ground, one-piece construction. We currently offer hole saws in diameters ranging from 0.4375" to 4.000". These saws are made to order to your required diameter. Metric sizes are also available.

The hole saw arbors are hardened tool steel, one-piece construction with precision ground shoulders and threads. The arbors include a wrench flat for hole saw mounting and removal and a 1/4" pilot. For hole saws between 0.4375" and 1.000" the arbor hole will have a 5/16-24 thread. Hole saws greater than 1.0000" in diameter will have a 1/2-20 threaded arbor hole.

For your additional information or quotes on aerospace hole saws and arbors, please contact your Weldon distributor or call us directly at 800.622.7742 and ask to speak with our inside Technical Support Department.





## MODIFICATIONS TO CATALOG STANDARDS

If you see a standard end mill that comes close to what you need, but not exactly, we offer an array of standard tool alterations to suit your needs. Listed below are some of the most frequent alterations we perform on our cutting tools:

- **Featured Coatings Available for All Tools**
- **Corner Radius**
- **Altered Length of Cut**
- **Weldon Flats**
- **Set Screw Flats**
- **Chamfers**
- **Coolant Grooves**

For more information, contact our customer service department. We'll be glad to help.



## SPECIALTY TOOLS AND COMPOSITE CUTTERS

Whether it is your design, or one with which we assist, we are your source for special application cutting tools. We will put decades of combined experience to work for you when making specific tools that you need. Please fax in a print or give us a call. We are always glad to help.



800-522-8665  
www.brubakertool.com



800-447-1476  
www.dataflute.com



800-682-8832  
www.fastcut.com



800-622-7742  
www.weldontool.com





















# How to Order

Ordering is as simple as contacting your local authorized distributor. Alternatively, you can call us directly to get a list of authorized distributors in your area. For technical support, please use the numbers listed below and ask to speak with an applications engineer. Thank you for your business and your support of American manufacturing.



BRUBAKER TOOL  
200 FRONT STREET  
MILLERSBURG, PA 17061

PHONE: 800-522-8665  
FAX: 717-692-4995  
www.brubakertool.com



DATA FLUTE  
9 BETNR INDUSTRIAL DRIVE  
PITTSFIELD, MA 01201

PHONE: 800-447-1476  
FAX: 800-504-3224  
www.dataflute.com



FASTCUT TOOL  
200 FRONT STREET  
MILLERSBURG, PA 17061

PHONE: 800-682-8832  
FAX: 717-692-2707  
www.fastcut.com



WELDON  
200 FRONT STREET  
MILLERSBURG, PA 17061

PHONE: 800-622-7742  
FAX: 717-692-5270  
www.endmills.com

## Limited Warranty

**Brubaker, Data Flute, Fastcut and Weldon** warrants to original equipment manufacturers, distributors and industrial and commercial users of its products that each new product that it manufactures or supplies is free from defects in material and workmanship. Its sole obligation under this warranty is limited to furnishing, without additional charge, a replacement for, or, at its option, repairing or issuing credit for any such product which shall, within one year from the date of sale by **Brubaker, Data Flute, Fastcut and Weldon** be returned freight prepaid to **Brubaker, Data Flute, Fastcut and Weldon** and which, upon inspection, is determined by **Brubaker, Data Flute, Fastcut and Weldon** to be defective in materials or workmanship. The provisions of this warranty shall not apply to any product which has been subjected to misuse, improper operating conditions, or which has been repaired or altered, if such would adversely affect performance of the product. Complete written information with respect to all such matters must be furnished to **Brubaker, Data Flute, Fastcut and Weldon** as a prerequisite to its consideration of any claim or complaint under this warranty.

The repair, replacement or issuance of credit for parts provided for in this warranty constitutes the Buyer's exclusive remedy. The warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular purpose. **Brubaker, Data Flute, Fastcut and Weldon** has no liability or responsibility on any claim of any kind, whether in contract, tort or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery or use of any product sold hereunder, in excess of the cost of replacement or repair as provided herein. In no event shall **Brubaker, Data Flute, Fastcut and Weldon** be liable for any special, incidental or consequential damages. **Brubaker, Data Flute, Fastcut and Weldon** makes no other warranty, express or implied, except as set forth above; and neither assumes nor authorizes any other person or entity to assume for it any other obligation or liability in connection with any of its products.

### WARNING

Any cutting tool may break or shatter under improper use. Government regulations require use of safety glasses and other appropriate safety equipment at all times in the vicinity of use. Wet or dry grinding of cutting tools produces potentially hazardous dusts or mists; to avoid adverse health effects, use adequate ventilation and read the material Safety Data Sheet for further applicable tool material or grade before grinding.

Four Brands. One Mission.

A collage of four black and white images related to aerospace: a commercial airplane flying through clouds, a close-up of a complex aircraft structure, a large circular metal component with a gear-like edge, and a helicopter in flight.

# AEROSPACE

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 **WELDON**  
800-622-7742  
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